**StarterWare 01.02.04.05**

**Release Notes**

Applies to Product Release: 01.02.04.05

Publication Date: 14 November, 2014

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1. **Overview**

This document is the **Release notes** of the StarterWare package. StarterWare release provides no-OS platform support for TDA1Mxx, TDA2xx and TDA3xx. The StarterWare package contains Device Abstraction Layer libraries and peripheral/board level sample/demo examples that demonstrate the capabilities of the peripherals on TDA1Mxx, TDA2xx and TDA3xx.

TDA1Mxx device family is a derivative of TMS320DM8148 that supports Advanced Driver Assistance Systems (ADAS) applications. For more information about the TDA1Mxx device family, please contact your local TI sales representative. For more information about TMD320DM814x, please visit <http://www.ti.com/product/tms320dm8148>.

TDA2xx is a high-performance, automotive vision application device based on enhanced OMAP™ architecture integrated on a 28-nm technology. The architecture is designed for Advanced Driver Assistance applications, including Vision Analytics for Single/Dual Front Camera, LVDS/Ethernet Surround View, Night Vision, Blind Spot Detection, Sensor Fusion and LIDAR, among others, and best-in-class CPU performance, video, image, and graphics processing sufficient to support

– Streaming video up to full high definition (Full-HD) (1920×1080p, 60 fps)

– 2-dimensional (2D) and 3-dimensional (3D) graphics.

TDA3x is an ADAS application device based on enhanced OMAP™ architecture integrated on a 28-nm technology. TDA3x complements the TDA2x ADAS device family by using a common architecture, enabling scalability from entry to high performance for a broad range of applications. The device family is targeted at ADAS applications including Front Camera, Intelligent Rear Camera, Radar and Mirror Replacement.

1. **Documentation**

List of documents provided in the package

* StarterWare\_Userguide.pdf
* StarterWare\_API\_Reference.chm
* SBL\_Userguide.pdf
* StarterWare\_DataSheet.pdf

**StarterWare 01.02.04.05**

* **Installation**

To install TDA1Mxx, TDA2xx and TDA3xx StarterWare on your PC, run the StarterWare installer (starterware\_setupwin32\_01\_02\_04\_05.exe). The installer allows you to choose the installation directory. The TDA1Mxx, TDA2xx and TDA3xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_02\_04\_05").

**New In this Release**

* Added support for identifying 12X12 SVB (Silicon Validation Board) in StarterWare.
* Added support for 12X12 SVB in tda3xx SBL.
* Added support for MICRON flash in QSPI Flash lib.
* Added Junction Temperature sensing example for TDA2xx and TDA3xx which helps read the thermal BGAP sensor values and also monitor thermal events on different voltage rails.
* Bug fixes

1. OMAPS00293758 CRED folder cleaning up with respect to TRM aligned HW files.
2. OMAPS00311706 Update the MPU and CORE domain voltages
3. OMAPS00315515 [DCAN Example] DCAN Loopback example is not validated on M4 for Tda2xx
4. OMAPS00315518 [DCAN] While running Dcan loopback example back to back , DCAN RAM Intialization fails
5. OMAPS00315776 Wrong voltage value programmed when e-fuse reads 0
6. OMAPS00315837 CLocks wrongly configured in tda2xx SBL
7. OMAPS00314720 Sometimes RBL doesn't boot up SBL

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* + To use Micron flash QSPI\_Initialize API should be called with parameter DEVICE\_TYPE\_MICRON\_QSPI4 for QSPI-4 bit mode and DEVICE\_TYPE\_MICRON\_QSPI1 for QSPI-1 bit mode. There is no compatibility break if Spansion flash is used.
  + TDA2xx SBL now forces MPU-1 off unconditionally.
* **Supported/ Validated Examples**

StarterWare examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | |
| A8  CGT | A8  GCC | M3 | C674x |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | Yes | Yes |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | Yes | Yes | NA |
| mailbox\_app | examples\mailbox | Yes | Yes | Yes | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | Yes | Yes | Yes | NA |
| mcspi\_app | examples\mcspi | Yes | Yes | Yes | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | Yes | NA | NA |
| sensor\_config\_app | examples\ov10630\_sensor | NT | NT | NT | NA |
| timer\_app | examples\timer | Yes | Yes | Yes | Yes |
| vipCapt | examples\vipCapt | NA | NA | NT | NA |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TDA2XX** | | |
| A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | Yes | NA |
| boot\_app | examples\boot | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA | NA |
| edid\_programmer | examples\i2c\_diag\_test\edid\_programmer | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | Yes | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | Yes | NA | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | Yes | NA | NA |
| mailbox\_app | examples\mailbox | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | Yes | NA | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | Yes | Yes | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NA | NT | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | NT | NA | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes | NA |
| pcie\_app\_ep\_write\_loopback | examples\pcie\write\_loopback\ep | NT | NA | NA |
| pcie\_app\_rc\_write\_loopback | examples\pcie\write\_loopback\rc | NT | NA | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | Yes | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | NT | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | Yes | NA |
| wdtimer\_app | examples\wdtimer | Yes | NA | NA |
| pm\_cpuidle\_test\_app | examples\pm\cpuidle | NT | NA | NA |
| dcan\_app\_loopback | Examples\dcan\dcanLoopback | Yes | Yes | NA |

|  |  |  |  |
| --- | --- | --- | --- |
| **Example** | **Folder** | **TDA3XX** | |
| M4 | C66x |
| DssApp | examples\DssApp | Yes | NA |
| boot\_app | examples\boot | Yes | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA |
| edma\_test\_app | examples\edma\_test | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | Yes | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA |
| mailbox\_app | examples\mailbox | Yes | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | No | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | Yes | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA |
| qspi\_test\_app | examples\qspi\_test | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | Yes | NA |
| timer\_app | examples\timer | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA |
| uart2\_test\_app | examples\uart\uart2 | Yes | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | Yes | NA |
| edid\_programmer | examples\i2c\_diag\_test\edid\_programmer | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA |
| videoLoopback | examples\videoLoopback | Yes | NA |
| vipCapt | examples\vipCapt | Yes | NA |
| dcan\_app\_loopback | examples\dcan\dcanLoopback | Yes | NA |
| rti\_app | examples\rti | NT | NA |

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD, PCIe, DCAN, RTI, CRC and WDTimer |
| Libs | I2C, QSPI, FAT, NOR, VPS (VIP, DSS, VPE, ISS) and PM |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx and TDA3xx platform. Validated QSPI and QSPI\_SD bootmode on TDA3xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **CQ Id** | **Headline** | **Release Version** |
| 1 | OMAPS00297890 | McSPI master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 2 | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 3 | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 4 | OMAPS00300001 | Apps for various peripherals not validated on ti814x | StarterWare\_01\_00\_01\_15 |
| 5 | OMAPS00303388 | File Conversion to Windows Format On Installing STW package | StarterWare\_01\_00\_02\_16 |
| 6 | OMAPS00307878 | [I2C] "1.5 System I2C hang due to miss of Bus Clear support" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 7 | OMAPS00307879 | [GP Timer] "1.8 Delay needed to read some GP timer registers after wakeup" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 8 | OMAPS00307880 | [DSS] "1.10 LCDENABLE Not Functional" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 9 | OMAPS00308667 | ABB is not tested by verifying the bias voltage at the bias capacitor | StarterWare\_01\_01\_02\_19 |
| 10 | OMAPS00310939 | Hang while doing IO recalibration in NOR bootmode | StarterWare\_01\_01\_02\_19 |
| 11 | OMAPS00311967 | [GEL] Change needed to DPLL\_ABE configuration | StarterWare\_01\_01\_03\_20 |
| 12 | OMAPS00312717 | Random display controller failure observed on some TDA2x EVMS | StarterWare\_01\_01\_03\_20 |
| 13 | OMAPS00312927 | Temp sensor APP fails when we run the starterware tests back to back | StarterWare\_01\_02\_01\_02 |
| 15 | OMAPS00312928 | videoLoopback App : FPS is observed as 58 instead of 60 | StarterWare\_01\_02\_01\_02 |
| 16 | OMAPS00312939 | Sometimes Junk charectors are seen on the UART1 terminal of tda3xx | StarterWare\_01\_02\_01\_02 |
| 17 | OMAPS00313546 | MMCSD file IO app returns file create error on second run for tda3xx | StarterWare\_01\_02\_01\_02 |
| 18 | OMAPS00314037 | Starterware Video examples are not integrated properly wrt Board module | StarterWare\_01\_02\_01\_02 |
| 19 | OMAPS00314097 | [starterware] mcspi spi1tospi2 test fails for tda3xx | StarterWare\_01\_02\_02\_03 |
| 21 | OMAPS00314648 | Sometimes AppImage isn't booting with SBL on tda3xx | StarterWare\_01\_02\_02\_03 |
| 22 | OMAPS00314660 | [DSS]- Frame height should be used for Interlaced display | StarterWare\_01\_02\_02\_03 |
| 23 | OMAPS00315251 | IO Delay Programming Needs to be done based on design recommendation | StarterWare\_01\_02\_03\_04 |
| 24 | OMAPS00315516 | [DCAN DAL] While running Dcan loopback example, Dcan Receive message object is updated with incorrect fifoEOBFlag value | StarterWare\_01\_02\_03\_04 |
| 25 | OMAPS00315892 | NOR flash writer cannot access regions above 16 MB | StarterWare\_01\_02\_04\_05 |

* **Known Limitations**

1. Serial Drivers:

* Junk characters are observed in the UART terminal whenever we do reset on the board.This is present in TDA3xx-EVM only.
* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.1.5 | Compiler for Cortex A8 |
| TMS470 CG | 5.1.5 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.5.0.00077 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2013q3 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2013q3 | Compiler for Cortex A15 |

**StarterWare 01.02.03.04**

* **Installation**

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**New In this Release**

* Added Support for DCAN HAL Library.
  + DCAN Board to Board Is not yet tested, only loopback (Tx to Rx) in test mode is tested.
* Power Management (PM) HAL APIs have been added for the TDA3xx device. The PM HAL abstraction for the following:
  + Voltage Domain & PMIC configuration
  + Power Domain Configuration
  + Clock Domain Configuration
  + Reset Domain Configuration
  + Module Mode Configuration from PRCM and IP Sysconfig register configuration.
  + Static Dependency Configuration
  + Temperature BGAP Sensor Configuration.
  + PRCM Interrupt Configuration.
* Added Support for RTI and CRC HAL Library
* Bug fixes

1. OMAPS00312591 Setting Video position doesn’t work in release mode
2. OMAPS00313734 [MMC HAL] Wrong value is written in SYSCONFIG register in HSMMCSDSystemConfig API.
3. OMAPS00314146 Power Optimized SBL Boot Fails when no valid app image is present

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* + Removed API SBLLibLoadAppImage() from interface file include/sbl\_lib.h and moved to internal file bootloader/sbl/src/sbl\_tda3xx\_priv.h.
* **Supported/ Validated Examples**

StarterWare examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | |
| A8  CGT | A8  GCC | M3 | C674x |
| ddr\_test\_app | examples\ddr\_stress\_test | NT | NT | NA | NA |
| edma\_test\_app | examples\edma\_test | NT | NT | NT | NT |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | NT | NT | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | NT | NT | NT | NA |
| mailbox\_app | examples\mailbox | NT | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NT | NA |
| mcspi\_app | examples\mcspi | NT | NT | NT | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | NT |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NT | NT | NA | NA |
| sensor\_config\_app | examples\ov10630\_sensor | NT | NT | NT | NA |
| timer\_app | examples\timer | NT | NT | NT | NT |
| vipCapt | examples\vipCapt | NA | NA | NT | NA |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TDA2XX** | | |
| A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | Yes | NA |
| boot\_app | examples\boot | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA | NA |
| edid\_programmer | examples\i2c\_diag\_test\edid\_programmer | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | Yes | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | Yes | NA | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | Yes | NA | NA |
| mailbox\_app | examples\mailbox | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | Yes | NA | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | Yes | Yes | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NA | NT | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | NT | NA | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes | NA |
| pcie\_app\_ep\_write\_loopback | examples\pcie\write\_loopback\ep | NT | NA | NA |
| pcie\_app\_rc\_write\_loopback | examples\pcie\write\_loopback\rc | NT | NA | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | Yes | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | Yes | NA |
| wdtimer\_app | examples\wdtimer | Yes | NA | NA |
| pm\_cpuidle\_test\_app | examples\pm\cpuidle | NT | NA | NA |
| DCAN | Examples\dcan\dcanLoopback | Yes | NT | NA |

|  |  |  |  |
| --- | --- | --- | --- |
| **Example** | **Folder** | **TDA3XX** | |
| M4 | C66x |
| DssApp | examples\DssApp | Yes | NA |
| boot\_app | examples\boot | NR | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA |
| edma\_test\_app | examples\edma\_test | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | Yes | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA |
| mailbox\_app | examples\mailbox | Yes | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | No | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | Yes | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA |
| qspi\_test\_app | examples\qspi\_test | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | No | NA |
| timer\_app | examples\timer | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA |
| uart2\_test\_app | examples\uart\uart2 | Yes | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | Yes | NA |
| edid\_programmer | examples\i2c\_diag\_test\edid\_programmer | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA |
| videoLoopback | examples\videoLoopback | Yes | NA |
| vipCapt | examples\vipCapt | Yes | NA |
| DCAN | examples\dcan\dcanLoopback | Yes | NA |
| RTI | examples\rti | NT | NA |

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD, PCIe, DCAN,RTI,CRC and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS (VIP, DSS) |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx and TDA3xx platform. Validated QSPI ,QSPI\_SD bootmode on TDA3xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **CQ Id** | **Headline** | **Release Version** |
| 1 | OMAPS00297890 | McSPI master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 2 | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 3 | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 4 | OMAPS00300001 | Apps for various peripherals not validated on ti814x | StarterWare\_01\_00\_01\_15 |
| 5 | OMAPS00303388 | File Conversion to Windows Format On Installing STW package | StarterWare\_01\_00\_02\_16 |
| 6 | OMAPS00307878 | [I2C] "1.5 System I2C hang due to miss of Bus Clear support" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 7 | OMAPS00307879 | [GP Timer] "1.8 Delay needed to read some GP timer registers after wakeup" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 8 | OMAPS00307880 | [DSS] "1.10 LCDENABLE Not Functional" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 9 | OMAPS00308667 | ABB is not tested by verifying the bias voltage at the bias capacitor | StarterWare\_01\_01\_02\_19 |
| 10 | OMAPS00310939 | Hang while doing IO recalibration in NOR bootmode | StarterWare\_01\_01\_02\_19 |
| 11 | OMAPS00311706 | Update the MPU and CORE domain voltages | StarterWare\_01\_01\_03\_20 |
| 12 | OMAPS00311967 | [GEL] Change needed to DPLL\_ABE configuration | StarterWare\_01\_01\_03\_20 |
| 13 | OMAPS00312029 | Random Display controller assert observed if HDMI is not connected -fixed by a WA in STW to mask the HDMI power on status | StarterWare\_01\_01\_03\_20 |
| 15 | OMAPS00312717 | Random display controller failure observed on some TDA2x EVMS | StarterWare\_01\_01\_03\_20 |
| 16 | OMAPS00312927 | Temp sensor APP fails when we run the starterware tests back to back | StarterWare\_01\_02\_01\_02 |
| 17 | OMAPS00312928 | videoLoopback App : FPS is observed as 58 instead of 60 | StarterWare\_01\_02\_01\_02 |
| 18 | OMAPS00312939 | Sometimes Junk charectors are seen on the UART1 terminal of tda3xx | StarterWare\_01\_02\_01\_02 |
| 19 | OMAPS00313546 | MMCSD file IO app returns file create error on second run for tda3xx | StarterWare\_01\_02\_01\_02 |
| 21 | OMAPS00314037 | Starterware Video examples are not integrated properly wrt Board module | StarterWare\_01\_02\_01\_02 |
| 22 | OMAPS00314097 | mcspi spi1tospi2 test fails for tda3xx | StarterWare\_01\_02\_02\_03 |
| 23 | OMAPS00314660 | [DSS]- Frame height should be used for Interlaced display | StarterWare\_01\_02\_02\_03 |
| 24 | OMAPS00314720 | Sometimes RBL doesn't boot up SBL | StarterWare\_01\_02\_02\_03 |
| 25 | OMAPS00315251 | IO Delay Programming Needs to be done based on design recommendation | StarterWare\_01\_02\_02\_03 |
| 26 | OMAPS00315516 | [DCAN DAL] While running Dcan loopback example, Dcan Receive message object is updated with incorrect fifoEOBFlag value | StarterWare\_01\_02\_03\_04 |
| 27 | OMAPS00315515 | [DCAN Example] DCAN Loopback example is not validated on M4 for Tda2xx | StarterWare\_01\_02\_03\_04 |
| 28 | OMAPS00315518 | [DCAN] While running Dcan loopback example back to back , DCAN RAM Intialization fails | StarterWare\_01\_02\_03\_04 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.1.5 | Compiler for Cortex A8 |
| TMS470 CG | 5.1.5 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.5.0.00077 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2013q3 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2013q3 | Compiler for Cortex A15 |

**StarterWare 01.02.02.03**

* **Installation**

To install TDA1Mxx, TDA2xx and TDA3xx StarterWare on your PC, run the StarterWare installer (starterware\_setupwin32\_01\_02\_02\_03.exe). The installer allows you to choose the installation directory. The TDA1Mxx, TDA2xx and TDA3xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_02\_02\_03"). This release has been validated only for TDA3xx platform.

**New In this Release**

* Power Management (PM) HAL APIs have been added for the TDA2xx device. The PM HAL abstraction for the following:
  + Voltage Domain & PMIC configuration
  + Power Domain Configuration
  + Clock Domain Configuration
  + Reset Domain Configuration
  + Module Mode Configuration from PRCM and IP sysconfig register configuration.
  + MPU LPRM Configuration.
  + Static Dependency Configuration
  + Temperature BGAP Sensor Configuration.
  + PRCM Interrupt Configuration.
* Power Management (PM) Library API has been added for the TDA2xx device that makes the MPU CPU to go to Idle state.
* A new example has been added for demonstrating the usage of PMLIBCpuIdle for the MPU which puts the MPU is retention and wakes it up in a loop 10 times.
* Added support for On-Chip SD-VENC Display for NTSC and PAL Formats (Applicable only for Tda3xx). Two new IOCTL added “IOCTL\_VPSCORE\_DCTRL\_ENABLE\_SDVENC” and “IOCTL\_VPSCORE\_DCTRL\_SET\_SDVENC\_MODE”
* Added support in QSPI lib to run QSPI at 96 MHz in mode 0 and at 64 MHz in mode 3 for tda3xx platform.
* Added support for Imaging Sub-System (ISS) for Tda3xx.
* Bug fixes

OMAPS00308844 [VIP] - Manual Switch setting required for capture Example

OMAPS00312935 nor\_read\_write app exits first time after entering input

OMAPS00312936 QSPI test app does not work with mode 0 on tda3xx

OMAPS00312937 GPIO Input interrupt app is not working

OMAPS00312938 GPIO4 reset done bit is not set on tda3xx

OMAPS00313622 [STW QSPI] set divider value in qspi clk select

OMAPS00313925 QSPI flash is running at wrong frequency

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Used PMHAL APIs instead of prcm\* API to enable modules/clocks/power domains in TDA2xx SBL. The following changes have been made to the TDA2xx SBL:
  + DPLL configuration structures have been updated for using pmhalPrcmDpllConfig\_t and DPLLs are configured with PMHALCMDpllConfigure API.
  + Clock Domain modes are set using PMHALCMSetCdClockMode APIs.
  + Video PLL configurations have been left unchanged.
  + Modules have been enabled using PMHALModuleModeSet.
  + Resets for the different reset domains (including CPUs) have been asserted/deasserted using PMHALResetAssert/PMHALResetRelease.
  + The following lists of peripheral IPs have been put to power down or clock gated state statically in the TDA2xx SBL. For CPUs if no valid application image is found the corresponding power domain is turned off or clock domain clocks are gated as applicable.

|  |  |
| --- | --- |
| Module Name | State of the module in SBL |
| PMHAL\_PRCM\_MOD\_ATL | SBL has been changed to not enable the clock domain. |
| PMHAL\_PRCM\_MOD\_DMA\_SYSTEM | SBL has been changed to not enable the clock domain |
| PMHAL\_PRCM\_MOD\_DSP1 | Power Domain is put to off when no valid application image found. |
| PMHAL\_PRCM\_MOD\_DSP2 | Power Domain is put to off when no valid application image found |
| PMHAL\_PRCM\_MOD\_EMIF2 | SBL has been changed to disable EMIF2 module if the compile flag used is SINGLE\_EMIF\_256MB. NOTE: Default compile time option is dual EMIF mode. |
| PMHAL\_PRCM\_MOD\_EVE1 | Power Domain is put to off when no valid application image found |
| PMHAL\_PRCM\_MOD\_EVE2 | Power Domain is put to off when no valid application image found |
| PMHAL\_PRCM\_MOD\_EVE3 | Power Domain is put to off when no valid application image found |
| PMHAL\_PRCM\_MOD\_EVE4 | Power Domain is put to off when no valid application image found |
| PMHAL\_PRCM\_MOD\_IPU1 | Clock Domain clocks are gated, Power Domain is not put to off if no valid application image is found. |
| PMHAL\_PRCM\_MOD\_IPU2 | Clock Domain clocks are gated, Power Domain is not put to off if no valid application image is found. |
| PMHAL\_PRCM\_MOD\_MMC2 | SBL has been changed to not enable MMC2 |
| PMHAL\_PRCM\_MOD\_MMC3 | SBL changed to not enable the module. |
| PMHAL\_PRCM\_MOD\_MMC4 | SBL changed to not enable the module. |
| PMHAL\_PRCM\_MOD\_MPU | CPU1 is forced off and CPU0 is in WFI. PD\_MPU is put to retention if no valid application image is found. |
| PMHAL\_PRCM\_MOD\_RTCSS | SBL has been changed to not enable the clock domain. |

* + All software configurable static dependencies have been disabled except MPU to EMIF.
  + A new compilation option is implemented for SBL compilation to ensure that the DSP1/2 , EVE1/2/3/4, IPU1/2 and MPU are not put to power down or clock down mode when no valid application image is present. It can be invoked using the following command:

**gmake –s sbl\_all PLATFORM=tda2xx SBL\_BUILD\_MODE=dev**

* **Supported/ Validated Examples**

StarterWare examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | |
| A8  CGT | A8  GCC | M3 | C674x |
| ddr\_test\_app | examples\ddr\_stress\_test | NT | NT | NA | NA |
| edma\_test\_app | examples\edma\_test | NT | NT | NT | NT |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | NT | NT | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | NT | NT | NT | NA |
| mailbox\_app | examples\mailbox | NT | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NT | NA |
| mcspi\_app | examples\mcspi | NT | NT | NT | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | NT |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NT | NT | NA | NA |
| sensor\_config\_app | examples\ov10630\_sensor | NT | NT | NT | NA |
| timer\_app | examples\timer | NT | NT | NT | NT |
| vipCapt | examples\vipCapt | NA | NA | NT | NA |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TDA2XX** | | |
| A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | Yes | NA |
| boot\_app | examples\boot | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA | NA |
| edid\_programmer | examples\i2c\_diag\_test\edid\_programmer | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | NT | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | Yes | NA | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | Yes | NA | NA |
| mailbox\_app | examples\mailbox | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | NT | NA | NT |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | Yes | Yes | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NA | No | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | No | NA | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes | NA |
| pcie\_app\_ep\_write\_loopback | examples\pcie\write\_loopback\ep | NT | NA | NA |
| pcie\_app\_rc\_write\_loopback | examples\pcie\write\_loopback\rc | NT | NA | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | NT | NT | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | NT | NA |
| wdtimer\_app | examples\wdtimer | Yes | NA | NA |
| pm\_cpuidle\_test\_app | examples\pm\cpuidle | NT | NA | NA |

|  |  |  |  |
| --- | --- | --- | --- |
| **Example** | **Folder** | **TDA3XX** | |
| M4 | C66x |
| DssApp | examples\DssApp | Yes | NA |
| boot\_app | examples\boot | Yes | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA |
| edma\_test\_app | examples\edma\_test | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | Yes | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA |
| mailbox\_app | examples\mailbox | Yes | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | No | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | No | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA |
| qspi\_test\_app | examples\qspi\_test | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | No | NA |
| timer\_app | examples\timer | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA |
| uart2\_test\_app | examples\uart\uart2 | Yes | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | Yes | NA |
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* **Release Content**

|  |  |
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| Libs | I2C, QSPI, FAT, NOR and VPS (VIP, DSS) |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx and TDA3xx platform. Validated QSPI bootmode on TDA3xx EVM. |

* **Known Issues**

|  |  |  |  |
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| 10 | OMAPS00310939 | Hang while doing IO recalibration in NOR bootmode | StarterWare\_01\_01\_02\_19 |
| 11 | OMAPS00311706 | Update the MPU and CORE domain voltages | StarterWare\_01\_01\_03\_20 |
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| 13 | OMAPS00312029 | Random Display controller assert observed if HDMI is not connected -fixed by a WA in STW to mask the HDMI power on status | StarterWare\_01\_01\_03\_20 |
| 14 | OMAPS00312591 | Settting Video postion doesnt work in release mode | StarterWare\_01\_01\_03\_20 |
| 15 | OMAPS00312717 | Random display controller failure observed on some TDA2x EVMS | StarterWare\_01\_01\_03\_20 |
| 16 | OMAPS00312927 | Temp sensor APP fails when we run the starterware tests back to back | StarterWare\_01\_02\_01\_02 |
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| 18 | OMAPS00312939 | Sometimes Junk charectors are seen on the UART1 terminal of tda3xx | StarterWare\_01\_02\_01\_02 |
| 19 | OMAPS00313546 | MMCSD file IO app returns file create error on second run for tda3xx | StarterWare\_01\_02\_01\_02 |
| 20 | OMAPS00313734 | [MMC HAL]Wrong value is written in SYSCONFIG register in HSMMCSDSystemConfig API | StarterWare\_01\_02\_01\_02 |
| 21 | OMAPS00314037 | Starterware Video examples are not integrated properly wrt Board module | StarterWare\_01\_02\_01\_02 |
| 22 | OMAPS00314097 | mcspi spi1tospi2 test fails for tda3xx | StarterWare\_01\_02\_02\_03 |
| 23 | OMAPS00314146 | Power Optimized SBL Boot Fails when no valid app image is present | StarterWare\_01\_02\_02\_03 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.1.5 | Compiler for Cortex A8 |
| TMS470 CG | 5.1.5 | Compiler for Cortex M3 and Cortex M4 |
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| CCS | 5.5.0.00077 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 01.02.01.02**

* **Installation**

To install TDA1Mxx, TDA2xx and TDA3xx StarterWare on your PC, run the StarterWare installer (starterware\_setupwin32\_01\_02\_01\_02.exe). The installer allows you to choose the installation directory. The TDA1Mxx, TDA2xx and TDA3xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_02\_01\_02"). This release has been validated only for TDA2xx and TDA3xx platform.

**New In this Release**

* Validated the following modules on TDA3xx EVM:
  + Secondary Bootloader (SBL) in QSPI-1 and QSPI-4 bootmode
  + HALs: I2C, Timer, UART, OCMC, GPIO, Mailbox, Spinlock, EDMA, GPMC, QSPI, McSPI, MMCSD and MMU
  + UART Console Utility
  + Libs: FAT, I2C, QSPI and VPS (VIP, DSS)
* Added Board library, Devices module library and application level utility.
* Added support for forcing the OPP for tda2xx SBL irrespective of silicon revision.
* Added UART2 test example for tda3xx platform, uart2\_test\_app.
* Added support to allocate/configure CBuf from a specific OCMC RAM.
* Added i2c\_eeprom\_app example which tests i2c @ 100 kbps, 400 kbps, FIFO enabled and FIFO disabled instead of different apps.
* Bug fixes

1. OMAPS00311330: Incorrect macro used for GPMC base address for ti814x
2. OMAPS00312733: [VIP] Bytes are swapped when capturing 16-bit RAW data
3. OMAPS00311952: Require an option in makefile to force OPP Modes
4. OMAPS00312220: AVS-0 configuration contains UART prints which is not yet initialized

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* DDR memory section start address is changed from 0x80000000 to 0x80000400 for all Starterware applications as 1 KB space is used by SBL for system requirements.
* Added ocmc\_inst\_id as a parameter to APIs OCMC\_CBUF\_Heap\_Init, OCMC\_CBUF\_Heap\_Alloc, OCMC\_CBUF\_Heap\_Free and OCMC\_CBUF\_Deinit in ocmc\_ecc\_l2.h
* Moved hw\_counter\_32k.h file from include\tda2xx\hw to include\hw as it is not platform specific hw file
* Moved hw\_ipu\_unicache\_cfg.h file from include\hw to include\tda2xx\hw as it is platform specific hw file.
* Added new field standard in structure VpsHal\_DssDispcLcdTimingParam in vpslib/hal/vpshal\_dssDispcOvly.h
* Deprecated the older pad mux config APIs of type <MODULE>\_pad\_mux\_config and defined new APIs of type Platform<Module>SetPinMux in platform.h. E.g. MCASP2\_pad\_mux\_config is deprecated and PlatformMCASP2SetPinMux should be used.
* Removed the following starterware examples:
  + mailbox\_m4\_app and mailbox\_qintr\_app and tested the features of these examples as part of mailbox\_app
  + ocmc\_overflow\_wrap , ocmc\_underflow, ocmc\_shortframe, ocmc\_addrSequence and ocmc\_overflow\_mid & tested the features of these examples as part of ocmc\_app
* Modified the below examples to use Board module:
  + boot\_app, DSSApp, temp\_sensor\_app, mcspiMasterSlave\_app, nor\_edma\_read, nor\_read\_write, ocmc\_app, ov10630\_sensor, sd\_fileIO, uart\_edma, uart\_intr, uart\_test, uart1\_test\_app, uart3\_test\_app, videoloopback
* Used PMHALModuleModeSet API instead of prcm\_set\_module\_mode API to enable module in TDA2xx SBL
* **Supported/ Validated Examples**

Starterware examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | |
| A8  CGT | A8  GCC | M3 | C674x |
| ddr\_test\_app | examples\ddr\_stress\_test | NT | NT | NA | NA |
| edma\_test\_app | examples\edma\_test | NT | NT | NT | NT |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | NT | NT | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | NT | NT | NT | NA |
| mailbox\_app | examples\mailbox | NT | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NT | NA |
| mcspi\_app | examples\mcspi | NT | NT | NT | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | NT |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NT | NT | NA | NA |
| sensor\_config\_app | examples\ov10630\_sensor | NT | NT | NT | NA |
| timer\_app | examples\timer | NT | NT | NT | NT |
| vipCapt | examples\vipCapt | NA | NA | NT | NA |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TDA2XX** | | |
| A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | Yes | NA |
| boot\_app | examples\boot | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA | NA |
| edid\_programmer | examples\i2c\_diag\_test\edid\_programmer | NT | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | Yes | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | No | NA | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | NT | NA | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | Yes | NA | NA |
| mailbox\_app | examples\mailbox | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | Yes | Yes | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | NT | NA | NT |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | NT | NT | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | NT | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NA | No | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | No | NA | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | No | No | NA |
| pcie\_app\_ep\_write\_loopback | examples\pcie\write\_loopback\ep | NT | NA | NA |
| pcie\_app\_rc\_write\_loopback | examples\pcie\write\_loopback\rc | NT | NA | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | NT | NT | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | Yes | NA |
| wdtimer\_app | examples\wdtimer | Yes | NA | NA |

|  |  |  |  |
| --- | --- | --- | --- |
| **Example** | **Folder** | **TDA3XX** | |
| M4 | C66x |
| DssApp | examples\DssApp | Yes | NA |
| boot\_app | examples\boot | Yes | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA |
| edma\_test\_app | examples\edma\_test | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | No | NA |
| gpio\_output\_app | examples\gpio\gpio\_output | Yes | NA |
| i2c\_eeprom\_app | examples\i2c\i2c\_eeprom\_app | Yes | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA |
| mailbox\_app | examples\mailbox | Yes | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | Yes | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | No | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA |
| qspi\_test\_app | examples\qspi\_test | No | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | No | NA |
| timer\_app | examples\timer | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA |
| uart2\_test\_app | examples\uart\uart2 | Yes | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | Yes | NA |
| edid\_programmer | examples\i2c\_diag\_test\edid\_programmer | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA |
| videoLoopback | examples\videoLoopback | Yes | NA |
| vipCapt | examples\vipCapt | Yes | NA |

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD, PCIe and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS (VIP, DSS) |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx and TDA3xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx 1.1 EVM. Validated QSPI bootmode on TDA3xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **CQ Id** | **Headline** | **Release Version** |
| 1 | OMAPS00297890 | McSPI master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 2 | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 3 | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 4 | OMAPS00300001 | Apps for various peripherals not validated on ti814x | StarterWare\_01\_00\_01\_15 |
| 5 | OMAPS00303388 | File Conversion to Windows Format On Installing STW package | StarterWare\_01\_00\_02\_16 |
| 6 | OMAPS00307878 | [I2C] "1.5 System I2C hang due to miss of Bus Clear support" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 7 | OMAPS00307879 | [GP Timer] "1.8 Delay needed to read some GP timer registers after wakeup" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 8 | OMAPS00307880 | [DSS] "1.10 LCDENABLE Not Functional" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 9 | OMAPS00308667 | ABB is not tested by verifying the bias voltage at the bias capacitor | StarterWare\_01\_01\_02\_19 |
| 10 | OMAPS00308844 | [VIP] - Manual Switch setting required for capture Example | Starterware\_01\_01\_01\_18 |
| 11 | OMAPS00310939 | Hang while doing IO recalibration in NOR bootmode | StarterWare\_01\_01\_02\_19 |
| 12 | OMAPS00311706 | Update the MPU and CORE domain voltages | StarterWare\_01\_01\_03\_20 |
| 13 | OMAPS00311967 | [GEL] Change needed to DPLL\_ABE configuration | StarterWare\_01\_01\_03\_20 |
| 14 | OMAPS00312029 | Random Display controller assert observed if HDMI is not connected -fixed by a WA in STW to mask the HDMI power on status | StarterWare\_01\_01\_03\_20 |
| 15 | OMAPS00312591 | Settting Video postion doesnt work in release mode | StarterWare\_01\_01\_03\_20 |
| 16 | OMAPS00312717 | Random display controller failure observed on some TDA2x EVMS | StarterWare\_01\_01\_03\_20 |
| 17 | OMAPS00312927 | Temp sensor APP fails when we run the starterware tests back to back | StarterWare\_01\_02\_01\_02 |
| 18 | OMAPS00312928 | videoLoopback App : FPS is observed as 58 instead of 60 | StarterWare\_01\_02\_01\_02 |
| 19 | OMAPS00312935 | nor\_read\_write app exits first time after entering input | StarterWare\_01\_02\_01\_02 |
| 20 | OMAPS00312936 | QSPI test app doesnot work with mode 0 on tda3xx | StarterWare\_01\_02\_01\_02 |
| 21 | OMAPS00312937 | GPIO Input interrupt app is not working | StarterWare\_01\_02\_01\_02 |
| 22 | OMAPS00312938 | GPIO4 reset done bit is not set on tda3xx | StarterWare\_01\_02\_01\_02 |
| 23 | OMAPS00312939 | Sometimes Junk charectors are seen on the UART1 terminal of tda3xx | StarterWare\_01\_02\_01\_02 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.1.5 | Compiler for Cortex A8 |
| TMS470 CG | 5.1.5 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.5.0.00077 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 01.01.03.20**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (starterware\_setupwin32\_01\_01\_03\_20.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_01\_03\_20"). This release has been validated only for TDA2xx platform.

**New In this Release**

* Validated DSP clock for OPP High at 750 MHz with vision SDK.
* Added PMIC HAL in starterware.
* Validated PCIe in gen2 mode.
* Added PCIe performance calculation app.
* Bug fixes

1. OMAPS00306752: PCIe Write Loopback example not validated in Gen2 mode
2. OMAPS00307877: [DSS] "1.4 Wrong Access In 1D Burst For YUV4:2:0-NV12 Format" Errata workaround needs to be implemented
3. OMAPS00308658: A15 GIC function “void IntSetTargetProcessor(uint32\_t intrNum, uint32\_t processorSelect)” overwrites previous set flags
4. OMAPS00309120: [VPDMA HAL] VPSHAL\_VPDMA\_ISBUSY function need to be renamed to VPSHAL\_VPDMA\_ISREADY to match the implementation
5. OMAPS00309341: SDK doesnot boot when SBL sets DSP frequency to 750 MHz
6. OMAPS00310467: IRQ enable/disable fails for CxM3/4 if ISRs call enable/disable API and interrupt enable/disable API
7. OMAPS00310940: Wrong boot address for DSP2 in case of no app image
8. OMAPS00310942: Wrong Calculation while calculating entry point page for EVE MMU in SBL

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Include platform.mk file before including env.mk file. env.mk file includes component.mk files from all packages, which depends on variable $SOC and $SOCFAMILY. These variables are defined in platform.mk file. This should be followed across the products.
* Added PlatformLockMMR API to lock MMR registers.
* Folowing APIs in platform are deprecated and alternate APIs are listed below.
  + HAL\_CTRL\_UnlockMMR is depricated and PlatformUnlockMMR should be used
  + UART\_PAD\_CONFIG is depricated and PlatformUARTSetPinMux should be used
  + Uartx\_Pin\_Mux functions are depricated and PlatformUARTxSetPinMux should be used. X in UARTx can be 1, 3, 4.
  + HAL\_CTRL\_ConfigurePadsQspi and cntrl\_core\_qspi\_pad\_config are depricated and PlatformQSPI1SetPinMux should be used
* PCIE PCS Delay count for both SS1 and SS2 use register field defined for SS2. Same is updated in PCIESS1CtrlConfig API.
* tda2xx dsp clock for OPP High configured at 750 MHz. It was clocked at 600 MHz in earlier release as SDK image was not coming up.
* In sbl multicore mailbox example (sbl\_multicore\_mbx and sbl\_multicore\_mbx\_1) linker cmd files and files under src directory moved to tda2xx folder. Added example for tda3xx platform also.
* New defines in GPMC added: GPMC\_DEVICESIZE\_32BITS and GPMC\_DEV\_PAGELENGTH\_THIRTYTWO, Supported only in tda3xx.
* Added new API VpsDssDispcAdvWbDmaConfig\_init to initialize Wb Dma Config structure.
* In the soc\_defines.h file defines containing platform names are renamed without the platform names. Ex:
  + CSL\_TI814x\_VPS\_CHRUS\_PER\_CNT is renamed to CSL\_VPS\_CHRUS\_PER\_CNT
  + CSL\_TDA3XX\_VPS\_VIP\_PER\_CNT is renamed to CSL\_VPS\_VIP\_PER\_CNT
  + CSL\_TDA2XX\_VPS\_VIP\_PER\_CNT is renamed to CSL\_VPS\_VIP\_PER\_CNT
* hw\_ctrl\_pad\_io.h file is platform specific and is removed from include/hw folder. Its present in include/<Platform>/hw
* New enum Fvid2\_FrameStatus added in fvid2\_datatypes.h
* In the enum Fvid2\_VideoIfWidth added below new enum values - FVID2\_VIFW\_1LANES, FVID2\_VIFW\_2LANES, FVID2\_VIFW\_3LANES, FVID2\_VIFW\_4LANES
* In the enum Fvid2\_VideoIfMode added below new enum values - FVID2\_VIFM\_SCH\_CSI2, FVID2\_VIFM\_SCH\_LVDS, FVID2\_VIFM\_SCH\_CPI
* Added new field for status in Fvid2\_Frame structure.
* Values of the below defines are modified.
  + VPSCORE\_VIP\_AUTO\_EDGELIST\_MAX\_SIZE changed from 16 to 32
  + IEM\_MAX\_CLIENT\_EVENTS changed from 10 to 15
  + GRAPH\_MAX\_NUM\_PATHS changed from 10 to 20
* **Supported/ Validated Examples**

Starterware examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TDA2XX** | | |
| A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | Yes | NA |
| boot\_app | examples\boot | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | Yes | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA | NA |
| gpio\_output | examples\gpio\gpio\_output | Yes | NA | NA |
| i2c\_100kbps\_app | examples\i2c\100kbps | Yes | NA | NA |
| i2c\_400kbps\_app | examples\i2c\400kbps | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA | NA |
| i2c\_fifo\_app | examples\i2c\fifo | Yes | NA | NA |
| i2c\_lld\_led\_blink\_app | i2c\i2c\_lld\_led | Yes | Yes | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | Yes | NA | NA |
| mailbox\_app | examples\mailbox\mailbox\_a15 | Yes | Yes | Yes |
| mailbox\_m4\_app | examples\mailbox\mailbox\_m4 | Yes | Yes | Yes |
| mailbox\_qintr\_app | examples\mailbox\mailbox\_qintr | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | Yes | Yes | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | Yes | Yes | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | Yes | NA | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | Yes | Yes | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NA | NT | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | NT | NA | NA |
| ocmc\_addrSequence | examples\ocmc\ocmc\_addr\_sequence | NA | Yes | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes | NA |
| ocmc\_overflow\_mid | examples\ocmc\ocmc\_overflow\_mid | NA | Yes | NA |
| ocmc\_overflow\_wrap | examples\ocmc\ocmc\_overflow\_wrap | NA | Yes | NA |
| ocmc\_shortframe | examples\ocmc\ocmc\_shortframe | NA | Yes | NA |
| ocmc\_underflow | examples\ocmc\ocmc\_underflow | NA | Yes | NA |
| pcie\_app\_ep\_write\_loopback | examples\pcie\write\_loopback\ep | Yes | NA | NA |
| pcie\_app\_rc\_write\_loopback | examples\pcie\write\_loopback\rc | Yes | NA | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | Yes | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | Yes | NA |
| wdtimer\_app | examples\wdtimer | Yes | NA | NA |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | |
| A8  CGT | A8  GCC | M3 | C674x |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | Yes | Yes |
| i2c\_100kbps\_app | examples\i2c\100kbps | Yes | Yes | NA | NA |
| i2c\_400kbps\_app | examples\i2c\400kbps | Yes | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | Yes | Yes | NA |
| i2c\_fifo\_app | examples\i2c\fifo | Yes | Yes | NA | NA |
| mailbox\_app | examples\mailbox\mailbox\_a15 | Yes | Yes | Yes | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NT | NA |
| mcspi\_app | examples\mcspi | Yes | Yes | Yes | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | Yes | NA | Yes |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | Yes | Yes | NA |
| timer\_app | examples\timer | Yes | Yes | Yes | Yes |
| vipCapt | examples\vipCapt | NA | NA | NT | NA |

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD, PCIe and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS (VIP, DSS) |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx 1.1 EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **CQ Id** | **Headline** | **Release Version** |
| 1. | OMAPS00297890 | McSPI master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 2. | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 3. | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 4. | OMAPS00300001 | Apps for various peripherals not validated on ti814x | StarterWare\_01\_00\_01\_15 |
| 5 | OMAPS00303388 | File Conversion to Windows Format On Installing STW package | StarterWare\_01\_00\_02\_16 |
| 6 | OMAPS00307878 | [I2C] "1.5 System I2C hang due to miss of Bus Clear support" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 7 | OMAPS00307879 | [GP Timer] "1.8 Delay needed to read some GP timer registers after wakeup" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 8 | OMAPS00307880 | [DSS] "1.10 LCDENABLE Not Functional" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 9 | OMAPS00308667 | ABB is not tested by verifying the bias voltage at the bias capacitor | StarterWare\_01\_01\_02\_19 |
| 10 | OMAPS00308844 | [VIP] - Manual Switch setting required for capture Example | Starterware\_01\_01\_01\_18 |
| 11 | OMAPS00310939 | Hang while doing IO recalibration in NOR bootmode | StarterWare\_01\_01\_02\_19 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.7 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.7 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 01.01.02.19**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (starterware\_setupwin32\_01\_01\_02\_19.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_01\_02\_19"). This release has been validated only for TDA2xx platform.

**New In this Release**

* Added Multiple Operating Point (Multi OPP) support in SBL, ER OMAPS00305848 and ER OMAPS00307159.
* Added ABB support in SBL, ER OMAPS00300577.
* Added IO delay Recalibration sequence in SBL for NOR boot mode.
* Added support in NOR and QSPI flash writers to load the image to be flashed using the loadraw command using CCS scripting console.
* Added support for setting make variable MAKERULEDIR which can be used to override the makerules directory path. By default, MAKERULEDIR is set as <ROOTDIR>/build/makerules.
* Added support to set the ROOTDIR in the make file using abspath instead of setting on environmental variable.
* Added new non-blocking APIs in qspiflashlib which don’t wait till flash becomes free (i.e. not busy).
* Bug fixes

1. OMAPS00308083: FMEA Analysis: Remove while loop which has a potential for looping endlessly without a time out in STW and SBL
2. OMAPS00306541 : Add IO Recalibration to SBL in NOR boot
3. OMAPS00307573 : [Installer] Incorrect message in pop-up windows in languages other than English
4. OMAPS00307589 : [UART] Incorrect LCR register programmed in OPMODE resulting in wrong parity and stop bits
5. OMAPS00307674 : IO delay recalibration should be done only for TDA2xx ES 1.1 device
6. OMAPS00307675 : AVS0 voltage should not be programmed for CORE\_VD for tda2xx ES1.0 device
7. OMAPS00307745 : Using MLO generated from starterware 01.01.01.18 SBL off SD card doesn’t boot
8. OMAPS00307746 : QSPI flashing takes very long time
9. OMAPS00307939: Select sysclk1 for dpll\_abe
10. OMAPS00308227 : Use ID Code to Identify ES1.1 Silicon
11. OMAPS00308261 : Implement A15 silicon errata Workaround: A memory read can stall indefinitely in the L2 cache
12. OMAPS00308345 : HDMI TV doesn't recognize HDMI connection
13. OMAPS00308543 : Starterware: McSPIFIFOTrigLvlSet API is resetting word count field
14. OMAPS00308603 : [McSPI] master Slave example does not work

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Starterware hw files directory structure is changed as defined below:
  + Common hw files for different SOCs (TDA2xx & TI814x) are present in include/hw folder
  + TDA2xx specific hw files are moved to include/tda2xx/hw folder
  + TI814x specific hw files are moved to include/ti814x/hw folder
  + The order of including the HW and ARCH header files now is taken care by the starterware\_hal module include path. Application should use this module include dependency instead of deciding the HW and ARCH header file path. Below is the order of preference

$(starterware\_PATH)/include/$(SOCFAMILY)/$(SOC)/hw $(starterware\_PATH)/include/$(SOCFAMILY)/hw $(starterware\_PATH)/include/hw $(starterware\_PATH)/include/$(ARCH)/$(SOCFAMILY) $(starterware\_PATH)/include/$(ARCH) $(starterware\_PATH)/include/$(SOCFAMILY)

* Files under bootloader/sbl/src are renamed as given below
  + sbl\_init.asm to sbl\_tda2xx\_init.asm
  + sbl\_main.c to sbl\_tda2xx\_main.c
  + sbl\_nor\_init.asm to sbl\_tda2xx\_nor\_init.asm
  + sbl\_rprc\_parse.c to sbl\_tda2xx\_rprc\_parse.c
* Below are the new non-blocking APIs in qspiflashlib which don’t wait till flash becomes free (i.e. not busy). If application is using these APIs, flash status should be checked before sending next command i.e. bit 0 of flash status should be 0 indicating flash is not busy. Ex: while ((QSPI\_FlashStatus() & 0x01))

APIs: QSPI\_WriteSectorsNonBlocking()

QSPI\_WriteCfgModeNonBlocking()

QSPI\_QuadEnableNonBlocking()

QSPI\_FlashBlockEraseNonBlocking()

QSPI\_FlashFullEraseNonBlocking()

* Files in platform/tda2xx are moved to platform/ folder. The generic function definitions are put in platform.c file. Pad configuration related functions in platform\_tda2xx.c file are moved to platform\_tda2xx\_pad\_config.c file.
* Merged interrupt.c for armv7m architecture for different platforms. Now interrupt.c is present in system\_config/armv7m folder and has been deleted from system\_config/armv7m/<platform> folders.
* Files under system\_config/c66x/tda2xx have been moved to system\_config/c66x
* Files under system\_config/c67x/ti814x have been moved to system\_config/c67x
* New enum added for fvid2 polarity - Fvid2\_FidPol
* New data formats are added in enum Fvid2\_DataFormat
* **Supported/ Validated Examples**

Starterware examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TDA2XX** | | |
| A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | Yes | NA |
| boot\_app | examples\boot | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | Yes | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | Yes | NA | NA |
| gpio\_output | examples\gpio\gpio\_output | Yes | NA | NA |
| i2c\_100kbps\_app | examples\i2c\100kbps | Yes | NA | NA |
| i2c\_400kbps\_app | examples\i2c\400kbps | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | NA | NA |
| i2c\_fifo\_app | examples\i2c\fifo | Yes | NA | NA |
| i2c\_lld\_led\_blink\_app | i2c\i2c\_lld\_led | Yes | Yes | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | Yes | NA | NA |
| mailbox\_app | examples\mailbox\mailbox\_a15 | Yes | Yes | Yes |
| mailbox\_m4\_app | examples\mailbox\mailbox\_m4 | Yes | Yes | Yes |
| mailbox\_qintr\_app | examples\mailbox\mailbox\_qintr | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | Yes | Yes | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | Yes | Yes | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | Yes | NA | Yes |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | Yes | Yes | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | Yes | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NA | Yes | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | Yes | NA | NA |
| ocmc\_addrSequence | examples\ocmc\ocmc\_addr\_sequence | NA | Yes | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | Yes | Yes | NA |
| ocmc\_overflow\_mid | examples\ocmc\ocmc\_overflow\_mid | NA | Yes | NA |
| ocmc\_overflow\_wrap | examples\ocmc\ocmc\_overflow\_wrap | NA | Yes | NA |
| ocmc\_shortframe | examples\ocmc\ocmc\_shortframe | NA | Yes | NA |
| ocmc\_underflow | examples\ocmc\ocmc\_underflow | NA | Yes | NA |
| pcie\_app\_ep\_write\_loopback | examples\pcie\write\_loopback\ep | Yes | NA | NA |
| pcie\_app\_rc\_write\_loopback | examples\pcie\write\_loopback\rc | Yes | NA | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | Yes | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | Yes | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | Yes | NA |
| wdtimer\_app | examples\wdtimer | Yes | NA | NA |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | |
| A8  CGT | A8  GCC | M3 | C674x |
| ddr\_test\_app | examples\ddr\_stress\_test | NT | NT | NA | NA |
| edma\_test\_app | examples\edma\_test | NT | NT | NT | NT |
| i2c\_100kbps\_app | examples\i2c\100kbps | NT | NT | NA | NA |
| i2c\_400kbps\_app | examples\i2c\400kbps | NT | NT | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | NT | NT | NT | NA |
| i2c\_fifo\_app | examples\i2c\fifo | NT | NT | NA | NA |
| mailbox\_app | examples\mailbox\mailbox\_a15 | NT | NT | NT | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | NT | NT | NT | NA |
| mcspi\_app | examples\mcspi | NT | NT | NT | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | NT |
| nor\_edma\_read | examples\nor\nor\_edma\_read | NT | NT | NA | NA |
| sensor\_config\_app | examples\ov10630\_sensor | NT | NT | NT | NA |
| timer\_app | examples\timer | NT | NT | NT | NT |
| vipCapt | examples\vipCapt | NA | NA | NT | NA |

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD, PCIe and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS (VIP, DSS) |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx 1.1 EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **CQ Id** | **Headline** | **Release Version** |
| 1. | OMAPS00297890 | McSPI master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 2. | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 3. | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 4. | OMAPS00300001 | Apps for various peripherals not validated on ti814x | StarterWare\_01\_00\_01\_15 |
| 5 | OMAPS00303388 | File Conversion to Windows Format On Installing STW package | StarterWare\_01\_00\_02\_16 |
| 6 | OMAPS00306752 | PCIe Write Loopback example not validated in Gen2 mode | Starterware\_01\_01\_01\_18 |
| 7 | OMAPS00307877 | [DSS] "1.4 Wrong Access In 1D Burst For YUV4:2:0-NV12 Format" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 8 | OMAPS00307878 | [I2C] "1.5 System I2C hang due to miss of Bus Clear support" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 9 | OMAPS00307879 | [GP Timer] "1.8 Delay needed to read some GP timer registers after wakeup" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 10 | OMAPS00307880 | [DSS] "1.10 LCDENABLE Not Functional" Errata workaround needs to be implemented | Starterware\_01\_01\_01\_18 |
| 11 | OMAPS00308288 | AVS-0 needs delay after configuring each voltage rail | Starterware\_01\_01\_01\_18 |
| 12 | OMAPS00308289 | Incorrect speed configuration in I2C HAL as per TRM | Starterware\_01\_01\_01\_18 |
| 13 | OMAPS00308290 | Incorrect Iclk value in i2clib | Starterware\_01\_01\_01\_18 |
| 14 | OMAPS00308658 | A15 GIC function “void IntSetTargetProcessor(uint32\_t intrNum, uint32\_t processorSelect)” overwrites previous set flags | Starterware\_01\_01\_01\_18 |
| 15 | OMAPS00308667 | ABB is not tested by verifying the bias voltage at the bias capacitor | StarterWare\_01\_01\_02\_19 |
| 16 | OMAPS00308844 | [VIP] - Manual Switch setting required for capture Example | Starterware\_01\_01\_01\_18 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.7 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.7 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 01.01.01.18**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (starterware\_setupwin32\_01\_01\_01\_18.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_01\_01\_18").

**New In this Release**

* Added HAL driver for PCIe.
* Added IO delay Recalibration sequence in SBL for SD and QSPI boot mode.
* Added support to identify TDA2xx ES 1.1 device.
* Changed QSPI\_SCLK from 48 MHz to 64 MHz for TDA2xx ES 1.1 device.
* Following libraries used by the Drivers package are MISRA C compliant. The report itself will be part of the BIOS Drivers package:
  + drivers
  + include
  + vpslib
  + i2clib
  + system\_config
  + utils
* Aligned the SBL DPLL configuration with GELv7
* Added support to set and get I2C Input Functional Clock , ER OMAPS00301919
* Added support to disable Watchdog Timer in Flash tools, ER OMAPS00302130
* Added new IOCTLs to vpslib for VIP overflow issue:

1. IOCTL\_VPS\_CAPT\_SET\_VIP\_PARAMS :

This IOCTL can be used to set the VIP hardware specific parameters. This IOCTL should be called after creating any VIP capture driver instance and before queuing or starting the capture driver. Starting the capture driver without calling this IOCTL will result in error. Once the capture is started this IOCTL can't be invoked and will result in error. Once the capture is stopped, application could call this IOCTL to reconfigure the VIP block with a different set of parameters.

1. IOCTL\_VPS\_CAPT\_GET\_VIP\_PARAMS

This IOCTL can be used to get the VIP hardware parameters. This IOCTL could be called at any time after creating VIP capture driver instance.

1. IOCTL\_VPS\_CAPT\_REGISTER\_OVF\_INTR

This IOCTL can be used to enable the overflow interrupt. User needs to pass overflow ISR which will be called when overflow occurs on VIP and the application handle corresponding to that VIP instance.

1. IOCTL\_VPS\_CAPT\_UNREGISTER\_OVF\_INTR

This IOCTL can be used to unregister from the overflow interrupt. This will unregister on the VIP instance of the handle passed.

1. IOCTL\_VPS\_CAPT\_CHECK\_OVERFLOW

This IOCTL can be used to get the status of overflow registers. This can be used with interrupt mode as well as polling mode. It will check overflow status on the handle passed and return the value in the parameter passed.

1. IOCTL\_VPS\_CAPT\_RESET\_VIP\_PORT

This IOCTL can be used to stop the VIP port corresponding to the handle passed. It sets the s/w reset bit of the VIP. This can be called in ISR context. It is used to stop the continuous overflow and come out of ISR

* Bug fixes

1. OMAPS00299534: SD FIle IO app fails on second run without board reset
2. OMAPS00301293: The size of AppImage is more when binary is in release mode.
3. OMAPS00302524: NOR and QSPI Flashing Errors
4. OMAPS00300088: VIP Issue on VME: Port does not recover from continuous overflow
5. OMAPS00302249: [Timer App] : Timer Enable Fails in strict optimization
6. OMAPS00303143: EVE\_SystemReset issue in SBL in starterware\_01\_00\_02\_16 package
7. OMAPS00303184: [STW]QSPI Driver support only to access 16MB size
8. OMAPS00303188: change SBL to match MPU frequency to OPP\_NOM speed which is 750 MHz.
9. OMAPS00303484: Compile issues of macro redefinition after changing u-> U
10. OMAPS00303655: Make Necessary Changes in SBL to align with Gel files
11. OMAPS00303705: DMAXBARConnect API xbarInst parameter needs to be aligned
12. OMAPS00303747: Cred Macros are used by QSPI DAL
13. OMAPS00304148: lld\_i2c\_close fails to check the i2c handle status
14. OMAPS00304598: Wrong EMIF settings for emif mode DUAL\_EMIF\_2X512MB
15. OMAPS00305504: VSS28 Hardware Bring-up
16. OMAPS00305708: Wrong DPLL settings for dpll\_abe in SBL
17. OMAPS00305710: Recalibrate IO Delay in SBL
18. OMAPS00305843: Voltage change should be done before frequency change in SBL
19. OMAPS00306088: [Makerules] Wrong linker command options used for CGTools
20. OMAPS00306361: [Starterware UserGuide] McASP Pin Configuration for EVM Test Case needs to be updated properly
21. OMAPS00306452: Wrong I2c Configuration in SBL for AVS class 0
22. OMAPS00306454: Wrong switch settings documented for SD bootmode in SBL

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Changed the QSPI flash command values to use 32 bit addressing. Applications need to change the number of address bytes sent if they are using these commands. The older 24 bit commands are available as new enum values under enum qspi\_ReadCommand\_e.
* Changed the **compiler** switches for TMS470 compiler in release mode:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Platform - Core | Compiler | Old Switches | New Switches |
| 1. | TI814x- a8 | TMS 470 | armcl -c -qq -pdsw225 --neon --endian=little -mv7A8 --abi=eabi -eo.oea8f -ea.sea8f -O3 -g | armcl -c -qq -pdsw225 --neon --endian=little -mv7A8 --abi=eabi -eo.oea8f -ea.sea8f -O3 -g |
| 2. | TI814x-m3 | TMS 470 | armcl -c -qq -pdsw225 --endian=little -mv7M3 --abi=eabi -eo.oem3 -ea.sem3 --symdebug:dwarf --embed\_inline\_assembly -ms -oe -O3 -op0 -os --optimize\_with\_debug --inline\_recursion\_limit=20 -g -ms | armcl -c -qq -pdsw225 --endian=little -mv7M3 --abi=eabi -eo.oem3 -ea.sem3 --symdebug:dwarf --embed\_inline\_assembly -o4 -os --optimize\_with\_debug --inline\_recursion\_limit=20 -g -ms |
| 3. | Tda2xx-m4 | TMS 470 | armcl -c -qq -pdsw225 --endian=little -mv7M4 --float\_support=vfplib --abi=eabi -eo.oem4 -ea.sem4 --symdebug:dwarf --embed\_inline\_assembly -ms -oe -O3 -op0 -os --optimize\_with\_debug --inline\_recursion\_limit=20 -g -ms | armcl -c -qq -pdsw225 --endian=little -mv7M4 --float\_support=vfplib --abi=eabi -eo.oem4 -ea.sem4 --symdebug:dwarf --embed\_inline\_assembly -o4 -os --optimize\_with\_debug --inline\_recursion\_limit=20 -g -ms |

* Changed the **linker** switches for TMS470 compiler in release mode:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Platform - Core | Compiler | Old Switches | New Switches |
| 1. | TI814x- a8 | TMS 470 | armlnk -w -q -u \_c\_int00 --silicon\_version=7A8 --strict\_compatibility=on -c --dynamic -x --zero\_init=on | armcl --silicon\_version=7A8 --run\_linker -w -q -u \_c\_int00 --strict\_compatibility=on -c --dynamic -x --zero\_init=on |
| 2. | TI814x-m3 | TMS 470 | armlnk -w -q -u \_c\_int00 --silicon\_version=7M3 -c --dynamic --opt='--endian=little -mv7M3 --abi=eabi -qq -pdsw225 -g -ms -oe --symdebug:dwarf -ms -op2 -O3 -os --optimize\_with\_debug --inline\_recursion\_limit=20 --diag\_suppress=23000' --strict\_compatibility=on -x --zero\_init=off | armcl -o4 --abi=eabi --silicon\_version=7M3 --run\_linker -w -q -u \_c\_int00 -c --dynamic --strict\_compatibility=on -x --zero\_init=off |
| 3. | Tda2xx-m4 | TMS 470 | armlnk -w -q -u \_c\_int00 --silicon\_version=7M4 -c --dynamic --opt='--endian=little -mv7M4 --float\_support=vfplib --abi=eabi -qq -pdsw225 -g -ms -oe --symdebug:dwarf -ms -op2 -O3 -os --optimize\_with\_debug --inline\_recursion\_limit=20 --diag\_suppress=23000' --strict\_compatibility=on -x --zero\_init=off | armcl -o4 --abi=eabi --silicon\_version=7M4 --run\_linker -w -q -u \_c\_int00 -c --dynamic --strict\_compatibility=on -x --zero\_init=off |

* Changed the **compiler** switches for TMS470 compiler in debug mode:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Platform - Core | Compiler | Old Switches | New Switches |
| 1. | TI814x- a8 | TMS 470 | armcl -c -qq -pdsw225 --neon --endian=little -mv7A8 --abi=eabi -eo.oea8f -ea.sea8f -g | armcl -c -qq -pdsw225 --neon --endian=little -mv7A8 --abi=eabi -eo.oea8f -ea.sea8f -g |
| 2. | TI814x-m3 | TMS 470 | armcl -c -qq -pdsw225 --endian=little -mv7M3 --abi=eabi -eo.oem3 -ea.sem3 --symdebug:dwarf --embed\_inline\_assembly -g -ms | armcl -c -qq -pdsw225 --endian=little -mv7M3 --abi=eabi -eo.oem3 -ea.sem3 --symdebug:dwarf --embed\_inline\_assembly -g -ms |
| 3. | Tda2xx-m4 | TMS 470 | armcl -c -qq -pdsw225 --endian=little -mv7M4 --float\_support=vfplib --abi=eabi -eo.oem4 -ea.sem4 --symdebug:dwarf --embed\_inline\_assembly -g -ms | armcl -c -qq -pdsw225 --endian=little -mv7M4 --float\_support=vfplib --abi=eabi -eo.oem4 -ea.sem4 --symdebug:dwarf --embed\_inline\_assembly -g -ms |

* Changed the **linker** switches for TMS470 compiler in debug mode:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Platform - Core | Compiler | Old Switches | New Switches |
| 1. | TI814x- a8 | TMS 470 | armlnk -w -q -u \_c\_int00 --silicon\_version=7A8 --strict\_compatibility=on -c --dynamic -x --zero\_init=on | armcl --silicon\_version=7A8 --run\_linker -w -q -u \_c\_int00 --strict\_compatibility=on -c --dynamic -x --zero\_init=on |
| 2. | TI814x-m3 | TMS 470 | armlnk -w -q -u \_c\_int00 --silicon\_version=7M3 -c --dynamic -x --zero\_init=off | armcl --silicon\_version=7M3 --run\_linker -w -q -u \_c\_int00 -c --dynamic -x --zero\_init=off |
| 3. | Tda2xx-m4 | TMS 470 | armlnk -w -q -u \_c\_int00 --silicon\_version=7M4 -c --dynamic -x --zero\_init=off | armcl --silicon\_version=7M4 --run\_linker -w -q -u \_c\_int00 -c --dynamic -x --zero\_init=off |

* **Supported/ Validated Examples**

Starterware examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | | **TDA2XX** | | |
| A8  CGT | A8  GCC | M3 | C674x | A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | NA | NA | NA | NA | Yes | NA |
| boot\_app | examples\boot | NA | NA | NA | NA | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | Yes | NA | NA | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | Yes | Yes | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | NA | NA | NA | NA | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | NA | NA | NA | NA | Yes | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | NA | NA | NA | NA | Yes | NA | NA |
| gpio\_output | examples\gpio\gpio\_output | NA | NA | NA | NA | Yes | NA | NA |
| i2c\_100kbps\_app | examples\i2c\100kbps | Yes | Yes | NA | NA | Yes | NA | NA |
| i2c\_400kbps\_app | examples\i2c\400kbps | Yes | Yes | NA | NA | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | Yes | Yes | NA | Yes | NA | NA |
| i2c\_fifo\_app | examples\i2c\fifo | Yes | Yes | NA | NA | Yes | NA | NA |
| i2c\_lld\_led\_blink\_app | i2c\i2c\_lld\_led | NA | NA | NA | NA | Yes | Yes | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | NA | NA | NA | NA | Yes | NA | NA |
| mailbox\_app | examples\mailbox\mailbox\_a15 | Yes | Yes | Yes | NA | Yes | Yes | Yes |
| mailbox\_m4\_app | examples\mailbox\mailbox\_m4 | NA | NA | NA | NA | Yes | Yes | Yes |
| mailbox\_qintr\_app | examples\mailbox\mailbox\_qintr | NA | NA | NA | NA | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | NA | NA | NA | NA | Yes | Yes | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | Yes | Yes | Yes | NA | Yes | Yes | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | NA | NA | NA | NA | Yes | NA | Yes |
| mcspi\_app | examples\mcspi | Yes | Yes | Yes | NA | NA | NA | NA |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | NA | NA | NA | NA | NT | NT | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA | NA | NA | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | NA | NA | NA | NA | Yes | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | Yes | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | NA | NA | NA | NA | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | Yes | NA | NA | NA | Yes | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | NA | NA | NA | NA | Yes | NA | NA |
| ocmc\_addrSequence | examples\ocmc\ocmc\_addr\_sequence | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | NA | NA | NA | NA | Yes | Yes | NA |
| ocmc\_overflow\_mid | examples\ocmc\ocmc\_overflow\_mid | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_overflow\_wrap | examples\ocmc\ocmc\_overflow\_wrap | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_shortframe | examples\ocmc\ocmc\_shortframe | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_underflow | examples\ocmc\ocmc\_underflow | NA | NA | NA | NA | NA | Yes | NA |
| pcie\_app\_ep\_write\_loopback | examples\pcie\write\_loopback\ep | NA | NA | NA | NA | Yes | NA | NA |
| pcie\_app\_rc\_write\_loopback | examples\pcie\write\_loopback\rc | NA | NA | NA | NA | Yes | NA | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | NA | NA | NA | NA | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | NA | NA | NA | NA | Yes | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | Yes | Yes | NA | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | NA | NA | NA | NA | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | NA | NA | NA | NA | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | NA | NA | NA | NA | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | NA | NA | NA | NA | Yes | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | NA | NA | NA | NA | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | NA | NA | NA | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | NA | NA | NA | NA | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | NA | NA | NA | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | NA | Yes | NA | NA | Yes | NA |
| wdtimer\_app | examples\wdtimer | NA | NA | NA | NA | Yes | NA | NA |

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD, PCIe and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **CQ Id** | **Headline** | **Release Version** |
| 1. | OMAPS00297890 | mcspi master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 2. | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 3. | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 4. | OMAPS00300001 | Apps for various peripherals not validated on ti814x | StarterWare\_01\_00\_01\_15 |
| 5. | OMAPS00303388 | File Conversion to Windows Format On Installing STW package | StarterWare\_01\_00\_02\_16 |
| 6. | OMAPS00306541 | Add IO Recalibration to SBL in NOR boot | Starterware\_01\_01\_01\_18 |
| 7. | OMAPS00306752 | PCIe Write Loopback example not validated in Gen2 mode. | Starterware\_01\_01\_01\_18 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.7 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.7 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 01.00.02.16**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (starterware\_setupwin32\_01\_00\_02\_16.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_00\_02\_16").

**New In this Release**

* Added support to build starterware in release mode.
* Added GCC tool chain support for A8.
* Added support to refresh the Watchdog Timer in SBL.
* Added EDMA mode in fatlib to read data from receive data buffer.
* Optimized the SBL in SD boot mode.
* Changed QSPI\_SCLK from 64 MHz to 48 MHz due to hardware limitation.
* Bug fixes

1. OMAPS00298278 [STW] : Huge heap size assigned for IPU examples
2. OMAPS00298288 [SBL] ROM bootloader reset WD TIMER2 in GP device. Second stage bootloader & application required to handle WD TIMER2
3. OMAPS00298898 sys clock detection in SBL incorrect
4. OMAPS00298931 [SBL] calling prcm\_set\_clkdomain\_state\_internal() for certain clock domains resulting timeout
5. OMAPS00299428 Wrong hw file used for MMCSD
6. OMAPS00299775 Wrong starterware\_PKG\_LIST\_ALL in component.mk
7. OMAPS00299863 Starterware Build fails when done on linux machine
8. OMAPS00299999 Release Build is not supported in starterware
9. OMAPS00300000 Wrong optimization level while building starterware in debug profile
10. OMAPS00300022 [Documentation] Test Report for apps not present in Release Notes
11. OMAPS00300090 Wrong Build Paramter in top level makefile: SOC instead of PLATFORM
12. OMAPS00300141 [SBL & STW] .COMMON section is not initialized to zero by the start-up code
13. OMAPS00300170 gmake -s clean is not working for tda2xx
14. OMAPS00300676 [Docs] Wrong Uart Configuration specified in Userguide
15. OMAPS00300679 [Docs] Add steps to comment tool-chains in Starterware Userguide
16. OMAPS00300746 Clean makerules specified incorrectly in top level makefile
17. OMAPS00300748 Different build and clean makerule for starterware apps
18. OMAPS00300749 Random targets defined in makefile
19. OMAPS00300879 Remarks on compilation because Executable statements are present before variable declarations
20. OMAPS00300889 Clean build missing for i2c\_lib on core c66x in top makefile
21. OMAPS00300896 Wrong Compiler Options for A15
22. OMAPS00300897 Warnings on checking for unused variables for A15
23. OMAPS00300898 Remark for missing return statement for mcasp sinetone app
24. OMAPS00300899 Wrong compiler and linker options for TMS470
25. OMAPS00300901 Wrong Compiler options for C6000 compiler
26. OMAPS00300914 Change default build profile from debug to release mode
27. OMAPS00301085 Nor EDMA Read App build failure on a8 gcc due to multiple re definition of symbols
28. OMAPS00301217 Wrong CFLAG in sbl\_multicore\_mbx makefile
29. OMAPS00301239 Linux Build error in Nor Profiler App
30. OMAPS00301284 Wrong Entry Point for SBL in NOR Boot Mode
31. OMAPS00301409 Wrong Entry Point for Starterware examples
32. OMAPS00301423 EDMA not working when SBL is used for booting in SD bootmode
33. OMAPS00301480 M4 interrupt controller not working correctly due to Uninitialized array
34. OMAPS00301557 M3 interrupt controller does not work with IRQ line no 48
35. OMAPS00301558 M3/M4 interrupt controller doesn't work properly in release mode if two interrupt lines are enabled
36. OMAPS00301559 Wrong Variable initialization in Uart Apps
37. OMAPS00301606 GPMC base address is hard coded in NOR apps
38. OMAPS00301613 Unused file in senor\_config\_app and videoLoopback

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Changed extensions for all A8/A15 binaries:
  + A15 binaries from .xea15 to .xa15fg
  + A8 binaries using TMS470 (cgt) from .xea8 to .xea8f
  + A8 binaries with GCC Compiler will have extension .xa8fg
* Changed extensions for all A8/A15 libraries:
  + A15 libraries from .aea15 to .aa15fg
  + A8 libraries using TMS470 (cgt) from .aea8 to .aea8f
  + A8 libraries with GCC Compiler will have extension .aa8fg
* All A8 specific System Config files for TI814x are moved from folder system\_config\armv7a\ti814x\\* to system\_config\armv7a\ti814x\<COMPILER>\\*, where <COMPILER> can be gcc or cgt. Older files supported CGT tool chain and thus are moved to system\_config\armv7a\ti814x\<COMPILER>\cgt\\* folder.
* Due to addition of EDMA support in fatlib, any example that uses fatlib needs to initialize the EDMA i.e. call EDMASetRegion() and EDMA3Init() APIs with proper parameters.
* Changed the top level Makefile targets from profilerApps to profiler\_apps, clean\_libs to libs\_clean and clean\_examples to examples\_clean.
* Added the targets sbl\_mutlicore\_app and profiler\_apps to target ‘all’.
* Added the targets sbl\_all\_clean, sbl\_multicore\_app\_clean and profiler\_apps\_clean to target ‘clean’.
* Added the new hw file for MMCSD driver hw\_mmc.h and deleted the old file hw\_hs\_mmcsd.h. Ported the MMCSD driver to new TRM consistent hw file.
* Reduced the heap size in M4 linker command file lnk\_m4.cmd from 0x08000000 to 0x20000.
* Changed the optimization level in debug profile for cores m3(vpss/video) , m4(vpss/video) and a8(host) from -O3 to -O0.
* Changed the compiler switches for TMS470, C6000 and Linaro compiler in debug mode:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Platform - Core | Compiler | Old Switches | New Switches |
| 1. | ti814x-a8 | TMS 470 | -c -qq -pdsw225 --neon --endian=$(ENDIAN) -mv7A8 --abi=$(CSWITCH\_FORMAT) -eo.$(OBJEXT) -ea.$(ASMEXT) --symdebug:dwarf | -c -qq -pdsw225 --neon --endian=$(ENDIAN) -mv7A8 --abi=$(CSWITCH\_FORMAT) -eo.$(OBJEXT) -ea.$(ASMEXT) -g |
| 2. | ti814x-c674x | C6000 | -mv6740 --abi=$(CSWITCH\_FORMAT) -q -mi10 -mo -pden -pds=238 -pds=880 -pds1110 --program\_level\_compile -g --endian=$(ENDIAN) -eo.$(OBJEXT) -ea.$(ASMEXT) | -c -qq -pdsw225 --endian=$(ENDIAN) -mv6740 --abi=$(CSWITCH\_FORMAT) -eo.$(OBJEXT) -ea.$(ASMEXT) -mi10 -mo -pdr -pden -pds=238 -pds=880 -pds1110 --program\_level\_compile -g |
| 3. | tda2xx-c66x | C6000 | -mv6600 --abi=$(CSWITCH\_FORMAT) -q -mi10 -mo -pden -pds=238 -pds=880 -pds1110 --program\_level\_compile -g --endian=$(ENDIAN) -eo.$(OBJEXT) -ea.$(ASMEXT) | -c -qq -pdsw225 --endian=$(ENDIAN) -mv6600 --abi=$(CSWITCH\_FORMAT) -eo.$(OBJEXT) -ea.$(ASMEXT) -mi10 -mo -pdr -pden -pds=238 -pds=880 -pds1110 --program\_level\_compile -g |
| 4. | tda2xx-a15 | Linaro GCC | -c -mcpu=cortex-a15 -g -mfpu=neon -mfloat-abi=hard -mabi=aapcs -mapcs-frame  -ffunction-sections -fdata-sections | -Wunused -Wunknown-pragmas -ffunction-sections -fdata-sections -mcpu=cortex-a15 -mfpu=neon -mfloat-abi=hard -mabi=aapcs -mapcs-frame -g |

* For A8 core and TMS470 tool chain, added optimization switch –O3 in release mode.
* Added CFLAGS “-ms -oe -O3 -op0 -os --optimize\_with\_debug --inline\_recursion\_limit=20” for M3/M4- TMS470 compiler in release mode.
* Added CFLAG “--optimize\_with\_debug” for C66x/C674x- C6000 compiler in release mode.
* Added linker options “-mfloat-abi=hard -nostartfiles -Wl,-static -Wl,--gc-sections” for A15- GCC tool chain.
* **Supported/ Validated Examples**

Starterware examples are supported for multiples cores and multiple platforms. In case of A8 core on TI814x multiple tool chains are supported. The following legend is applicable to a particular core on a particular platform and for a particular tool chain (Only in case of A8 and TI814x):

* + Yes – Example is supported and tested successfully for this release
  + NA – Example is not supported on the core for the particular platform
  + NT – Example is supported but not tested for this release
  + No – Example is supported but fails for this release

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Example** | **Folder** | **TI814X** | | | | **TDA2XX** | | |
| A8  CGT | A8  GCC | M3 | C674x | A15 | M4 | C66x |
| DssApp | examples\DssApp | NA | NA | NA | NA | NA | Yes | NA |
| boot\_app | examples\boot | NA | NA | NA | NA | Yes | NA | NA |
| ddr\_test\_app | examples\ddr\_stress\_test | Yes | Yes | NA | NA | Yes | NA | NA |
| edma\_test\_app | examples\edma\_test | Yes | Yes | Yes | Yes | Yes | Yes | NA |
| eeprom\_app | examples\i2c\_diag\_test\eeprom\_i2c | NA | NA | NA | NA | Yes | NA | NA |
| gpio\_exp\_app | examples\i2c\_diag\_test\i2c\_gpio\_expander | NA | NA | NA | NA | Yes | NA | NA |
| gpio\_input\_interrupt\_app | examples\gpio\gpio\_input\_interrupt | NA | NA | NA | NA | Yes | NA | NA |
| gpio\_output | examples\gpio\gpio\_output | NA | NA | NA | NA | Yes | NA | NA |
| i2c\_100kbps\_app | examples\i2c\100kbps | Yes | Yes | NA | NA | Yes | NA | NA |
| i2c\_400kbps\_app | examples\i2c\400kbps | Yes | Yes | NA | NA | Yes | NA | NA |
| i2c\_driver\_led\_blink\_app | examples\i2c\i2c\_driver\_led | Yes | Yes | Yes | NA | Yes | NA | NA |
| i2c\_fifo\_app | examples\i2c\fifo | Yes | Yes | NA | NA | Yes | NA | NA |
| i2c\_lld\_led\_blink\_app | i2c\i2c\_lld\_led | NA | NA | NA | NA | Yes | Yes | NA |
| i2c\_test\_app | examples\i2c\_diag\_test\i2c\_all | NA | NA | NA | NA | Yes | NA | NA |
| mailbox\_app | examples\mailbox\mailbox\_a15 | Yes | Yes | Yes | NA | Yes | Yes | Yes |
| mailbox\_m4\_app | examples\mailbox\mailbox\_m4 | NA | NA | NA | NA | Yes | Yes | Yes |
| mailbox\_qintr\_app | examples\mailbox\mailbox\_qintr | NA | NA | NA | NA | Yes | Yes | Yes |
| mcaspBurstTransmit\_app | examples\mcasp\mcasp\_bursttransmit | NA | NA | NA | NA | Yes | Yes | NA |
| mcaspTransmit\_app | examples\mcasp\mcasp\_transmit | Yes | Yes | Yes | NA | Yes | Yes | NA |
| mcasp\_sinetone\_app | examples\mcasp\mcasp\_sinetone | NA | NA | NA | NA | Yes | NA | Yes |
| mcspi\_app | examples\mcspi | NT | NT | NT | NA | NA | NA | NA |
| mcspiMasterSlave\_app | examples\mcspiMasterSlave\masterslave | NA | NA | NA | NA | NT | NT | NA |
| mcspiMaster\_app | examples\mcspiMasterSlave\master | NT | NT | NT | NA | NT | NT | NA |
| mcspiSlave\_app | examples\mcspiMasterSlave\slave | NT | NT | NT | NA | NA | NA | NA |
| mmcsd\_fileIO\_app | examples\sd\_fileIO | NA | NA | NA | NA | Yes | NA | NA |
| mmu\_tlb\_twl\_app | examples\mmu\tlb\_twl | NA | NA | NA | Yes | NA | NA | Yes |
| mmu\_translation\_fault\_handle\_app | examples\mmu\translation\_fault\_handle | NA | NA | NA | NA | Yes | NA | Yes |
| nor\_edma\_read | examples\nor\nor\_edma\_read | Yes | Yes | NA | NA | NA | Yes | NA |
| nor\_read\_write | examples\nor\nor\_read\_write | NA | NA | NA | NA | Yes | NA | NA |
| ocmc\_addrSequence | examples\ocmc\ocmc\_addr\_sequence | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_app | examples\ocmc\ocmc\_basic | NA | NA | NA | NA | Yes | Yes | NA |
| ocmc\_overflow\_mid | examples\ocmc\ocmc\_overflow\_mid | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_overflow\_wrap | examples\ocmc\ocmc\_overflow\_wrap | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_shortframe | examples\ocmc\ocmc\_shortframe | NA | NA | NA | NA | NA | Yes | NA |
| ocmc\_underflow | examples\ocmc\ocmc\_underflow | NA | NA | NA | NA | NA | Yes | NA |
| pmic\_app | examples\i2c\_diag\_test\pmic\_i2c | NA | NA | NA | NA | Yes | NA | NA |
| qspi\_test\_app | examples\qspi\_test | NA | NA | NA | NA | Yes | Yes | NA |
| sensor\_config\_app | examples\ov10630\_sensor | Yes | Yes | Yes | Yes | Yes | NA | NA |
| spinlock\_test | examples\spinlock\_test | NA | NA | NA | NA | Yes | Yes | Yes |
| temp\_sensor\_app | examples\i2c\_diag\_test\i2c\_temp\_sensor | NA | NA | NA | NA | Yes | NA | NA |
| timer\_app | examples\timer | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| uart1\_test\_app | examples\uart\uart1 | NA | NA | NA | NA | Yes | NA | NA |
| uart3\_test\_app | examples\uart\uart3 | NA | NA | NA | NA | Yes | NA | NA |
| uart\_edma\_test | examples\uart\uart\_edma | NA | NA | NA | NA | Yes | Yes | NA |
| uart\_intr\_test | examples\uart\uart\_intr | NA | NA | NA | NA | NA | Yes | NA |
| uart\_test | examples\uart\uart\_test | NA | NA | NA | NA | Yes | NA | NA |
| videoLoopback | examples\videoLoopback | NA | NA | NA | NA | NA | Yes | NA |
| vipCapt | examples\vipCapt | NA | NA | Yes | NA | NA | Yes | NA |
| wdtimer\_app | examples\wdtimer | NA | NA | NA | NA | Yes | NA | NA |

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **CQ Id** | **Headline** | **Release Version** |
| 1. | OMAPS00297890 | mcspi master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 2. | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 3. | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 4. | OMAPS00299534 | SD FIle IO app fails on second run without board reset | StarterWare\_01\_00\_00\_14 |
| 5. | OMAPS00300001 | Apps for various peripherals not validated on ti814x | StarterWare\_01\_00\_01\_15 |
| 6. | OMAPS00300088 | VIP Issue: Port does not recover from continuous overflow | StarterWare\_00\_01\_00\_09 |
| 7. | OMAPS00301293 | The size of AppImage is more when binary is in release mode. | StarterWare\_01\_00\_00\_14 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.4 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.4 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc. |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A8 GCC |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 01.00.01.15**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (starterware\_setupwin32\_01\_00\_01\_15.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_00\_01\_15").

**New In this Release**

* Updated GPIO expander, EEPROM and SD card file IO board diagnostic test application to support test on JAMR3 board.
* Bug fixes

1. OMAPS00294246 soc.h for TI814x is not complete.
2. OMAPS00298591 SD File IO App fails if the AppImage file is not present in the card
3. OMAPS00298904 [Capture] VIPCapture Output results in blank frames when inline scalar is enabled for 1:1 ratio
4. OMAPS00299533 MMC Instance one base address was hard coded in FAT lib

* **Upgrade and Compatibility Information**

There are no interface changes for this release.

* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **Headline** | **Release Version** |
| 1. | OMAPS00293758 | CRED folder cleaning up with respect to TRM aligned HW files. | StarterWare\_00\_01\_00\_02 |
| 2. | OMAPS00296324 | VIP multi-instance memory issue | StarterWare\_00\_01\_00\_08 |
| 3. | OMAPS00297890 | mcspi master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 4. | OMAPS00298278 | [STW] : Huge heap size assigned for IPU examples | StarterWare\_00\_02\_02\_12 |
| 5. | OMAPS00298288 | [SBL] ROM bootloader reset WD TIMER2 in GP device. Second stage bootloader & application required to handle WD TIMER2 | StarterWare\_00\_02\_02\_12 |
| 6. | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 7. | OMAPS00298854 | [SBL] - Bring MPU\_CPU1 core out of reset | StarterWare\_01\_00\_00\_14 |
| 8. | OMAPS00298898 | sys clock detection in SBL incorrect | StarterWare\_01\_00\_00\_14 |
| 9 | OMAPS00298931 | [SBL] calling prcm\_set\_clkdomain\_state\_internal() for certain clock domains resulting timeout | StarterWare\_00\_02\_02\_12 |
| 10 | OMAPS00299428 | Wrong hw file used for MMCSD | StarterWare\_01\_00\_00\_14 |
| 11 | OMAPS00299531 | the DDR SW levelling values are differing from GEL files from TI. | StarterWare\_01\_00\_00\_14 |
| 12 | OMAPS00299534 | SD FIle IO app fails on second run without board reset | StarterWare\_01\_00\_00\_14 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.4 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.4 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 01.00.00.14**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (starterware\_setupwin32\_01\_00\_00\_14.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ starterware\_01\_00\_00\_14").

**New In this Release**

* Validated example apps with SBL.
* Added the HAL driver for WDTimer (WatchDog Timer)
* Added NOR flash library.
* Added Burst Mode Support Application for tda2xx-evm. This demonstrates below features:
  + Burst Mode Support on A15, M4 using EDMA Manual Trigger Mode.
  + Demonstrate Burst Transfer in Single Burst and no intermediate transfers
  + Synchronization using Interrupt and Polled Mechanism between EDMA Transfers and Buffers
  + HW Ping Pong Buffer Mechanism.
  + Data Packets to be sent at different user configurable Delays,
  + Update User Configurable Buffer Params
* Added a new VIP IOCTL “VPSCORE\_VIP\_IOCTL\_GET\_CURCAPTFRM\_INFO” to get the buffer pointer of the current frame being captured.
* Added nested interrupt support for DSP
* Optimized and enhanced SBL on TDA2xx-EVM
  + Multi-level trace support is added to control the trace message both at build level & API level.
  + Boot-up performance improvement in NOR boot mode: Tested with AV BIOS SDK application, boot-up time improved from 2612ms to 252ms
  + Boot-up performance improvement in SD boot mode:  Tested with AV BIOS SDK application, boot-up time improved from 6050.3ms to 2117.72ms
  + Implemented ProfileApps to measure the data through-put of GPMC NOR FLASH, QSPI Serial FLASH & SD card.
  + In SBL added support for multiple EMIF configuration
* DUAL\_EMIF\_2X512MB
* DUAL\_EMIF\_1GB\_512MB
* SINGLE\_EMIF\_256MB
* Verified the vipCapt on TDA1Mxx-EVM.
* Added following examples on TDA2xx-EVM:
  + MCASP Burst Transfer app
  + MCASP sinetone app
  + Video loopback app
  + NOR read write app
* Bug fixes

1. OMAPS00292783 SBL - PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state.
2. OMAPS00293522 [Build] Drivers should be build without --gcc option
3. OMAPS00295913 DR\_TRMINC00101: Wrong polarity documented for Pad conf pull enable and slew control bits.
4. OMAPS00296399 Unable to view source code on loading binary on A15
5. OMAPS00296757 [SBL] On PORz very first boot fails on DDR3 configuration. This occur on certain samples only.
6. OMAPS00296779 [STW] NOR Flash writer crashes if download image size is large
7. OMAPS00297216 Sensor App and edma app nor working on dsp for ti814x
8. OMAPS00297218 mcasp and mcspi apps not validated on ti814x
9. OMAPS00297219 vipCapt not validated on ti814x
10. OMAPS00297256 Board diag binaries are not working with SBL on removing gel files from CCS.
11. OMAPS00297271 [STW] Not accepted to implement board diagnostic requirement in the NOR Flash writer tool
12. OMAPS00297576 Wrong version number for linaro in release notes and userguide
13. OMAPS00297584 Remove -gcc option from build options
14. OMAPS00297825 [VIPCapture] VIPCapture doesn't result in error when scalar is enabled for VIP0 portA and PortB
15. OMAPS00297997 gmake -s clean gives errors
16. OMAPS00297998 Instruction return pointer(IRP) not handled in DSP Interrupt controller ISR code
17. OMAPS00298006 Nested interrupt not handled in DSP interrupt controller ISR
18. OMAPS00298014 Clean command for tda2xx not working properly
19. OMAPS00298054 Wrong compiler option for c66x
20. OMAPS00298152 Add missing TI file header & remove dead codes in SBL
21. OMAPS00298330 [stw]edma\_test: doesnot run second time on dsp
22. OMAPS00298348 [stw] edma examples fail if bCnt and cCnt values passed are not 1
23. OMAPS00298403 Warnings while building vpslib for PACKAGE\_SELECT vps-vpe-only for tda2xx
24. OMAPS00298404 vpslib build is failing for PACKAGE\_SELECT vps-dss-only for tda2xx
25. OMAPS00298507 McASP Transmit Application Fails
26. OMAPS00298277 McASP Application FIFO Control Setting Bug
27. OMAPS00298650 [CPLUS PLUS BUILD] CPLUS PLUS BUILD is not validated for the release.

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Removed the –gcc compiler option for building drivers for all cores.
* Renamed the nor\_app to nor\_edma\_read and moved it from folder examples/nor\_app to examples/nor/nor\_edma\_read.
* Modified vps\_init() as common driver init API for capture and DSS modules instead of individual driver init API i.e., vps\_init() for capture and vps\_Dssinit () for DSS Modules. vps\_init() is defined in newly added file “vps\_initDrv.c”. This file is to be included while calling vps related APIs.
* nor read write test was added as part of nor flash writer, this is made as a separate example under examples/nor/nor\_read\_write.
* Removed uartlib dependent files from Bootloader folder which was used in Zebu platform.
* Renamed the file sbl\_tda2xx\_SR0.c to sbl\_tda2xx\_sr0.c.
* Changed the folder name from PrebuildBinaries to prebuild\_binaries.
* Added a new folder videoloopback under the folder prebuild\_binaries\application\_images.
* Updated McASP Macro MCASP\_TX\_FS\_WIDTH\_WORD in mcasp.h
* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP, McSPI, OCMC, QSPI, SBL,MMU, Timer, MMCSD and WDTimer |
| Libs | I2C, QSPI, FAT, NOR and VPS |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **Headline** | **Release Version** |
| 1. | OMAPS00293758 | CRED folder cleaning up with respect to TRM aligned HW files. | StarterWare\_00\_01\_00\_02 |
| 2. | OMAPS00294246 | soc.h for TI814x is not complete. | StarterWare\_00\_01\_00\_08 |
| 3. | OMAPS00296324 | VIP multi-instance memory issue | StarterWare\_00\_01\_00\_08 |
| 4. | OMAPS00297890 | mcspi master slave sample app not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 5. | OMAPS00297894 | VideoLoopback Application: Queue-Dequeue from multiple buffer is not supported. | StarterWare\_00\_02\_02\_12 |
| 6. | OMAPS00298278 | [STW] : Huge heap size assigned for IPU examples | StarterWare\_00\_02\_02\_12 |
| 7. | OMAPS00298288 | [SBL] ROM bootloader reset WD TIMER2 in GP device. Second stage bootloader & application required to handle WD TIMER2 | StarterWare\_00\_02\_02\_12 |
| 8. | OMAPS00298489 | [STW] Enable Semi-hosting in Cortex-A15 build system | StarterWare\_00\_02\_02\_12 |
| 9 | OMAPS00298591 | SD File IO App fails if the AppImage file is not present in the card | StarterWare\_00\_02\_02\_12 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.4 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.4 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |
| Linaro bare-metal GCC | Linaro GCC 4.7.2012q4 | Compiler for Cortex A15 |

**StarterWare 00.02.02.12**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_02\_02\_12\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

**New In this Release**

* Verified the GPIO interrupt test on TDA2xx-evm for following signal change: High level, Rising edge and falling edge.
* Verified the following modules on TDA1Mxx-EVM
* Mailbox app
* Edma test app
* Timer app
* Nor app
* Sensor config app
* DDR stress app
* MMU test app
* I2C in 100 kbps, 400 kbps and fifo mode.
* Bug fixes

1. OMAPS00296768 DDR test App not validated for M4
2. OMAPS00296986 Mailbox app not validated on ti814x
3. OMAPS00297037 Sensor config app does not work in interrupt mode on ti814x DSP core
4. OMAPS00297038 Sensor config app not validated on centaurus for Starterware \_00\_02\_01\_11 release

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Change in macros used for display instances:

|  |  |  |
| --- | --- | --- |
| Sr. No. | **Old** Macro | **New** Macro |
| 1. | VPS\_DISP\_INST\_DSS\_VID1 | VPSDRV\_DISP\_INST\_DSS\_VID1 |
| 2. | VPS \_DISP\_INST\_DSS\_VID2 | VPSDRV\_DISP\_INST\_DSS\_VID2 |
| 3. | VPS \_DISP\_INST\_DSS\_VID3 | VPSDRV\_DISP\_INST\_DSS\_VID3 |
| 4. | VPS\_DISP\_INST\_DSS\_GFX1 | VPSDRV\_DISP\_INST\_DSS\_GFX1 |

* Structure name is changed from Vps\_DispDssParams to VpsDrv\_DispDssParams.
* Modified signature of VpsDrv\_dssSetParams API from Int32 VpsDrv\_dssSetParams(VpsDrv\_DispInstObj \*pObj, const Vps\_DispDssParams \*pathCfg) to Int32 VpsDrv\_dssSetParams(VpsDrv\_DispInstObj \*pObj, const VpsDrv\_DispDssParams \*pathCfg) to accommodate the change in structure name.
* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI, SBL,MMU, Timer and MMCSD |
| Libs | I2C, QSPI, FAT and VPS |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **Headline** | **Release Version** |
| 1 | OMAPS00292783 | SBL - PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state. | StarterWare\_00\_01\_00\_05 |
| 2 | OMAPS00293522 | [Build] Drivers should be build without --gcc option | StarterWare\_00\_01\_00\_05 |
| 3 | OMAPS00294246 | soc.h for TI814x is not complete. | StarterWare\_00\_01\_00\_08 |
| 4 | OMAPS00295913 | DR\_TRMINC00101: Wrong polarity documented for Pad conf pull enable and slew control bits. | StarterWare\_00\_01\_00\_09 |
| 5 | OMAPS00296312 | Starterware I2C LLD fails in 32 byte FIFO mode. Works fine for 8 and 15 byte FIFO mode | StarterWare\_00\_01\_00\_09 |
| 6 | OMAPS00296324 | VIP multi-instance memory issue | StarterWare\_00\_01\_00\_08 |
| 7 | OMAPS00296399 | Unable to view source code on loading binary on A15 | StarterWare\_00\_02\_00\_10 |
| 8 | OMAPS00296665 | SD Card File IO APP not validated for ti814x platform | StarterWare\_00\_02\_00\_10 |
| 9 | OMAPS00296757 | [SBL] On PORz very first boot fails on DDR3 configuration. This occur on certain samples only. | StarterWare\_00\_02\_00\_10 |
| 10 | OMAPS00296779 | [STW] NOR Flash writer crashes if download image size is large | StarterWare\_00\_02\_00\_10 |
| 11 | OMAPS00297216 | Sensor App and edma app nor working on dsp for ti814x | StarterWare\_00\_02\_01\_11 |
| 12 | OMAPS00297218 | mcasp and mcspi apps not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 13 | OMAPS00297219 | vipCapt not validated on ti814x | StarterWare\_00\_02\_01\_11 |
| 14 | OMAPS00297256 | Board diag binaries are not working with SBL on removing gel files from CCS. | StarterWare\_00\_02\_00\_10 |
| 15 | OMAPS00297271 | [STW] Not accepted to implement board diagnostic requirement in the NOR Flash writer tool | StarterWare\_00\_02\_01\_11 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.4 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.4 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |
| Linaro bare-metal GCC | Linaro GCC 4.6.2012q4 | Compiler for Cortex A15 |

**StarterWare 00.02.01.11**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_02\_01\_11\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

**New In this Release**

* Optimized and enhanced I2C lib on TDA2xx-EVM
* Optimized I2C lib
* Replaced delays with status checks. I2c operations in interrupt mode are affected due to this change.
* Added delay between write and read operations to EEPROM app to account for data processing time.
* Added FIFO support in I2C LIB
* Changing I2C clock on demand

For more details refer to I2Clib sections of TDA1Mxx\_TDA2xx\_StarterWare\_UserGuide

* Optimized and enhanced SBL on TDA2xx-EVM
  + Regression feature added in the SBL. It adds support to validate the binaries in regression mode. Validated the SBL regression testing with DV & SiVal test cases.
  + To measure the boot-up time, CPU cycle read hooks are added in the SBL main flow. SBL boot-up cycles are captured in the userguide.
  + Improved the QSPI boot-up time from 3% to 65%
    - Configure QSPI SCLK at 64MHz
    - Use EDMA to copy the sections from serial flash to device memory
* Added the HAL driver for Timer (General Purpose Timer)
* Verified the following modules on TDA2xx-EVM
* NOR flash test app
* SD card File IO app
* Tested I2Clib configured in 400 kbps(Polled, Interrupt and DMA mode)
* UART in interrupt and dma mode
* UART test app for different line characteristics configurations.
* Mailbox for queue not full interrupt
* IRQ XBAR for all possible instances for cores A15, M4 and C66x.
* GPIO read configured in interrupt mode
* OCMC configured in Block and FULL ECC mode
* EDMA test case extended(Tested QDMA)
* MMU test case to handle translation fault.
* QSPI tested with different clock configuration and with fast read, dual and quad read.
* Bug fixes

1. OMAPS00292462 Memory Datasheet needed
2. OMAPS00292802 starterware - non secure mode interrupt handling
3. OMAPS00293633 [edma3\_lld] Crossbar configuration is done wrong for tda2xx/Vayu platform
4. OMAPS00293634 OCMC issue on VIRTIO platform
5. OMAPS00293688 eDMA\_LLD\_02.11.06.01 build steps and missing tools update in Rules.mk
6. OMAPS00293757 McSPI , DSP interrupt controller, I2C EDMA not validated on virtio tda2xx
7. OMAPS00293761 TDAM1xx: GPIOModuleReset function is getting hung
8. OMAPS00294094 DSP goes for reset after servicing interrupt
9. OMAPS00294414 [SBL] SBL fails to check for SD card status. If SD card is not inserted & SBL runs from CCS it hang on file mount
10. OMAPS00294755 lld\_i2c\_transfer return success with wrong slave address
11. OMAPS00294869 OCMC Examples need hard reset
12. OMAPS00294871 McSPI and McASP are not verified on tda2xx-evm
13. OMAPS00295911 Determining the core by reading from a core id or device id register (if possible), instead of compile time definitions.
14. OMAPS00295990 Qspi flash writer with erase only required region fails for last block
15. OMAPS00296071 Boot test for nor flash not validated for release 00.02.00.10
16. OMAPS00296072 nor flash test app not validated for release 00.02.00.10
17. OMAPS00296073 SD card test not validated for release 00.02.00.10
18. OMAPS00296160 UART & MMC Lib - Multi instance support
19. OMAPS00296241 SBL fails to configure rgmii port-0 pad.
20. OMAPS00296244 M4 interrupt controller does not work with IRQ line no 48
21. OMAPS00296258 ARM interrupt controller is not working for IRQ line no. 139 and above
22. OMAPS00296261 ARM interrupt controller is working for Interrupt line 5 and 126
23. OMAPS00296321 Starterware I2C clock issue
24. OMAPS00296376 Changing I2C clock frequency on denmand
25. OMAPS00296384 Need Support in I2C LLD to pass timeout parameter 0
26. OMAPS00296722 [STW] - QSPI Flash library EDMA read sector API support to copy only 0xFFFF bytes. If length exceeds QSPI EDAM read fails
27. OMAPS00296724 [STW] starterware edma library deinit() api is not bring-up edma system to clear state

* **Upgrade and Compatibility Information**

Below are the interface changes in starterware:

* Modified signature of QSPI\_ReadCfgMode API in file <starterware\_rootdir>/ qspilib\qspi\_flash/qspi\_flash.c from uint32\_t QSPI\_ReadCfgMode(uint32\_t srcOffsetAddr) to void QSPI\_ReadCfgMode(uint32\_t dstAddr, uint32\_t srcOffsetAddr, uint32\_t length) in order to read multiple bytes of data and make the read generic.
* Removed assignment of regionId in EDMA3Init() function. Now EDMAsetRegion() API should be called before calling the EDMA3Init() on using edma hal from <starterware\_rootdir>/drivers/edma.c.
* Added new API void QSPI\_WriteCfgMode(uint32\_t dstOffsetAddr, uint32\_t srcAddr, uint32\_t length) to qspi flash lib for QSPI write in configuration port mode in file <starterware\_rootdir>/qspilib/qspi\_flash/qspi\_flash.h.
* Moved function declarations of APIs related to prcm, pin mux, etc. from examples’ source files to platform.h. This file should be included while calling platform related APIs.
* Added API LLD\_hsi2cErrorCode\_t lld\_i2c\_SetFifoThreshold(LLD\_Hsi2cInstId\_t instanceId, uint8\_t rxThreshold, uint8\_t txThreshold); to set the FIFO threshold in file <starterware\_rootdir>/include/i2clib/lld\_hsi2c.h. This API should be called after calling lld\_i2c\_init () API and before calling lld\_i2c\_open ().
* Added API LLD\_hsi2cErrorCode\_t lld\_i2c\_clockConfig(LLD\_Hsi2cInstId\_t instanceId, uint32\_t functionalClock, lld\_i2c\_busspeed busFrequency) to change i2c clock on demand in file <starterware\_rootdir>/include/i2clib/lld\_hsi2c.h. This API should be called after calling lld\_i2c\_open() API and before calling lld\_i2c\_transfer().
* In order to run edma examples like edma\_test\_app, uart\_edma\_test, etc. from M4 with SBL, AMMU configuration needs to be done. To do this, call the gel function IPU\_AMMU\_FOR\_EDMA from M4. This function is present in <starterware\_rootdir>/tools/gel/VayuIPC.gel.
* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI, SBL,MMU, Timer and MMCSD |
| Libs | I2C, QSPI, FAT and VPS |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| Bootloader | SBL bootloader for TDA2xx platform. Validated SD, NOR and QSPI bootmode on TDA2xx EVM. |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **Headline** | **Release Version** |
| 1 | OMAPS00292783 | SBL - PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state. | StarterWare\_00\_01\_00\_05 |
| 2 | OMAPS00293522 | [Build] Drivers should be build without --gcc option | StarterWare\_00\_01\_00\_05 |
| 3 | OMAPS00294246 | soc.h for TI814x is not complete. | StarterWare\_00\_01\_00\_08 |
| 4 | OMAPS00295913 | DR\_TRMINC00101: Wrong polarity documented for Pad conf pull enable and slew control bits. | StarterWare\_00\_01\_00\_09 |
| 5 | OMAPS00296312 | Starterware I2C LLD fails in 32 byte FIFO mode. Works fine for 8 and 15 byte FIFO mode | StarterWare\_00\_01\_00\_09 |
| 6 | OMAPS00296324 | VIP multi-instance memory issue | StarterWare\_00\_01\_00\_08 |
| 7 | OMAPS00296399 | Unable to view source code on loading binary on A15 | StarterWare\_00\_02\_00\_10 |
| 8 | OMAPS00296665 | SD Card File IO APP not validated for ti814x platform | StarterWare\_00\_02\_00\_10 |
| 9 | OMAPS00296757 | [SBL] On PORz very first boot fails on DDR3 configuration. This occur on certain samples only. | StarterWare\_00\_02\_00\_10 |
| 10 | OMAPS00296768 | DDR test App not validated for M4 | StarterWare\_00\_02\_00\_10 |
| 11 | OMAPS00296779 | [STW] NOR Flash writer crashes if download image size is large | StarterWare\_00\_02\_00\_10 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.4 | Compiler for Cortex A8 |
| TMS470 CG | 5.0.4 | Compiler for Cortex M3 and Cortex M4 |
| C6000 CG Tool | 7.4.2 | Compiler for C674x and C66x |
| CCS | 5.4.0.00091 | Code composer studio to load and run the application. Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |
| Linaro bare-metal GCC | Linaro GCC 4.6.2012q4 | Compiler for Cortex A15 |

**StarterWare 00.02.00.10**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_02\_00\_10\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

**New In this Release**

* Verified the following modules on TDA2xx-EVM
* DDR3
* PMIC
* GPIO Expander
* QSPI Flash
* EEPROM
* UART
* Temperature Sensor
* SD Card
* NOR Flash
* LCD
* Boot Test
* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI, SBL,MMU |
| Libs | I2C, QSIP and VIP |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| bootloader | SBL bootloader for TDA2xx platform. Validated SD bootmode on Zebu(V1.2.5) |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **Headline** | **Release**  **Version** |
| 1 | OMAPS00292783 | SBL - PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state. | StarterWare\_00\_01\_00\_05 |
| 2 | OMAPS00292785 | SBL - IVA (ICONT1 & ICONT2) & MPU\_CPU\_1 core bring-up is not supported | StarterWare\_00\_01\_00\_05 |
| 3 | OMAPS00292802 | starterware - non secure mode interrupt handling | StarterWare\_00\_01\_00\_05 |
| 4 | OMAPS00293688 | eDMA\_LLD\_02.11.06.01 build steps and missing tools update in Rules.mk | StarterWare\_00\_01\_00\_05 |
| 5 | OMAPS00294414 | [SBL] SBL fails to check for SD card status. If SD card is not inserted & SBL runs from CCS it hang on file mount | StarterWare\_00\_01\_00\_05 |
| 6 | OMAPS00293522 | [Build] Drivers should be build without --gcc option | StarterWare\_00\_01\_00\_04 |
| 7 | OMAPS00293633 | [edma3\_lld] Crossbar configuration is done wrong for tda2xx/Vayu platform | StarterWare\_00\_01\_00\_05 |
| 8 | OMAPS00293634 | OCMC issue on VIRTIO platform | StarterWare\_00\_01\_00\_02 |
| 9 | OMAPS00293757 | McSPI , DSP interrupt controller, I2C EDMA not validated on virtio tda2xx | StarterWare\_00\_01\_00\_08 |
| 10 | OMAPS00293761 | TDAM1xx: GPIOModuleReset function is getting hung | StarterWare\_00\_01\_00\_08 |
| 11 | OMAPS00294094 | DSP goes for reset after servicing interrupt | StarterWare\_01\_00\_00\_xx |
| 12 | OMAPS00294246 | soc.h for TI814x is not complete. | StarterWare\_00\_01\_00\_08 |
| 13 | OMAPS00294755 | lld\_i2c\_transfer return success with wrong slave address | StarterWare\_00\_01\_00\_08 |
| 14 | OMAPS00294869 | OCMC Examples need hard reset | StarterWare\_00\_01\_00\_08 |
| 15 | OMAPS00294871 | McSPI and McASP are not verified on TDA2xx-EVM | StarterWare\_00\_01\_00\_08 |
| 16 | OMAPS00296071 | Boot test for nor flash not validated for release 00.02.00.10 | StarterWare\_00\_01\_00\_09 |
| 17 | OMAPS00296072 | nor flash test app not validated for release 00.02.00.10 | StarterWare\_00\_01\_00\_09 |
| 18 | OMAPS00296073 | SD card test not validated for release 00.02.00.10 | StarterWare\_00\_01\_00\_09 |

**StarterWare 00.01.00.09**

* **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_01\_00\_09\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

* **New In this Release**
* Verified the following modules on TDA2xx-EVM
  + Edma
  + Mailbox
  + Mailbox\_m4\_app
  + Mmu\_app
  + Ocmc\_app
  + Spinlock
  + I2C
  + UART
  + SBL
  + OCMC
  + NOR APP
  + GPIO
  + QSPI
  + Sensor config
  + Nor Flash writer
  + QSPI flash writer
* C66X Build Support added
* SBL :
  + Validated SBL on TDA2xx PG1.0
  + Added NOR boot
  + Validated QSPI, NOR & SD boot mode on TDA2xx PG1.0
* Following modules were verified on TDA2xx-EVM during bringup activities, but could not verify on the final release package due to modified EVM unavailability.
  + NOR app ,GPIO ,Hsi2c\_app ,Nor\_flash\_writer ,Qspi\_test\_app ,Qspi\_flash\_writer ,Sensor\_config\_app,
* Following driver modules are not verified on tda2xx EVM
  + mmcsd-file-IO
  + vipCapt
  + McSPI
  + McASP
* BugFixes
  + OMAPS00293972 MMU - MMU application hangs in MMUSoftReset() API while running on Centaurus
  + OMAPS00293976 McSPI - McSPI flash application has build errors
  + OMAPS00294415 [SBL] SBL fails to boot-up SysBIOS application on IPU core
  + OMAPS00294746 [SBL] Slave cores boot fails with SysBIOS & SMP based applications.
  + OMAPS00292781 SBL - Functional clock are not switching to non-gated state for coreaon, dss, gmac, rtc & prcm\_cd\_vpe PRCM clock-domain.
  + OMAPS00292784 SBL - Video1, Video2 & HDMI PLL programming is not implemented.
  + OMAPS00293235 I2C0 Probe Fails
  + OMAPS00293238 Audio Codec Configuration Fails via I2C
  + OMAPS00294061 wrong gcc compile option
  + OMAPS00294163 Missing Obj files while building starterware\_vpslib
  + OMAPS00294308 McASP FrameSyncCfg API Inconsistency
  + OMAPS00294351 [I2C] I2C should be set in free running mode to work in Tda2xx EVM
  + OMAPS00294738 [SBL] MMCSD card driver init issue fail to detect the card
  + OMAPS00294741 [SBL] Issue with QSPI PAD config. Modified the QSPI Pad configuration based on EVM PadConf Mapping.xlsx
  + OMAPS00294742 [SBL] ABE & USB\_CONF dpll are not getting locked
  + OMAPS00294744 [SBL] Section mapped into OCMC region is not copied into the destination location
  + OMAPS00294748 [SBL] NOR boot mode fails. Data section is not getting initialized
  + OMAPS00294749 [SBL] Nor flash writer fails in nor boot modes. Missing the GPMC timing parameter & pad config
  + OMAPS00294758 qspi test app write fails
  + OMAPS00294760 port GPIO testapp to vayu
  + OMAPS00294761 ocmc test fails when run second time
  + OMAPS00294762 nor app port to vayu; GPMC timing, Pinmux
  + OMAPS00294771 NameSpace clash in McASP Driver.
* **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI, SBL,MMU |
| Libs | I2C, QSIP and VIP |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| bootloader | SBL bootloader for TDA2xx platform. Validated SD bootmode on Zebu(V1.2.5) |

* **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **Headline** | **Release**  **Version** |
| 1 | OMAPS00292783 | SBL - PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state. | StarterWare\_00\_01\_00\_05 |
| 2 | OMAPS00292785 | SBL - IVA (ICONT1 & ICONT2) & MPU\_CPU\_1 core bring-up is not supported | StarterWare\_00\_01\_00\_05 |
| 3 | OMAPS00292802 | starterware - non secure mode interrupt handling | StarterWare\_00\_01\_00\_05 |
| 4 | OMAPS00293688 | eDMA\_LLD\_02.11.06.01 build steps and missing tools update in Rules.mk | StarterWare\_00\_01\_00\_05 |
| 5 | OMAPS00294414 | [SBL] SBL fails to check for SD card status. If SD card is not inserted & SBL runs from CCS it hang on file mount | StarterWare\_00\_01\_00\_05 |
| 6 | OMAPS00293522 | [Build] Drivers should be build without --gcc option | StarterWare\_00\_01\_00\_04 |
| 7 | OMAPS00293633 | [edma3\_lld] Crossbar configuration is done wrong for tda2xx/Vayu platform | StarterWare\_00\_01\_00\_05 |
| 8 | OMAPS00293634 | OCMC issue on VIRTIO platform | StarterWare\_00\_01\_00\_02 |
| 9 | OMAPS00293757 | McSPI , DSP interrupt controller, I2C EDMA not validated on virtio tda2xx | StarterWare\_00\_01\_00\_08 |
| 10 | OMAPS00293761 | TDAM1xx: GPIOModuleReset function is getting hung | StarterWare\_00\_01\_00\_08 |
| 11 | OMAPS00294094 | DSP goes for reset after servicing interrupt | StarterWare\_01\_00\_00\_xx |
| 12 | OMAPS00294246 | soc.h for TI814x is not complete. | StarterWare\_00\_01\_00\_08 |
| 13 | OMAPS00294755 | lld\_i2c\_transfer return success with wrong slave address | StarterWare\_00\_01\_00\_08 |
| 14 | OMAPS00294869 | OCMC Examples need hard reset | StarterWare\_00\_01\_00\_08 |
| 15 | OMAPS00294871 | McSPI and McASP are not verified on TDA2xx-EVM | StarterWare\_00\_01\_00\_08 |

* **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.2 | Compiler Cortex A8 |
| TMS470 CG | 5.0.2 | Compiler Cortex M3 |
| C6000 CG Tool | 7.4.1 | Compiler C674x |
| CCS | 5.2 | Code composer studio to load and run the application |
| Linaro bare-metal GCC | 4.7.3 | Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |

**StarterWare 00.01.00.08**

1. **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_01\_00\_08\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

1. **New In this Release**

* SBL :
  + QSPI and NOR bootmodes are added.
  + AVS CLASS-0 is added
    - Note that these features can be verified only on evm and hence not verified on pre-silicon.
* QSPI write validated on Virtio tda2xx
* EDMA: Validated on M4 and Cortex A15 using virtio tda2xx and Zebu.
* ARM15 Interrupt controller: Multiple Interrupt validated on Virtio tda2xx and Zebu
* OCMC validated on Zebu with extended testing.
* MMU validated on Zebu
* UART console validated on Zebu.
* BugFixes
  + OMAPS00292784 : SBL : Video1, Video2 & HDMI PLL programming is not implemented.

1. **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI, SBL,MMU |
| Libs | I2C, QSIP and VIP |
| Utils | Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| bootloader | SBL bootloader for TDA2xx platform. Validated SD bootmode on Zebu(V1.2.5) |

1. **Known Issues**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **State** | **Headline** | **Release**  **Version** |
| 1 | OMAPS00292781 | Open | SBL - Functional clock are not switching to non-gated state for coreaon, dss, gmac, rtc & prcm\_cd\_vpe PRCM clock-domain.  Need to test this behavior on silicon. | 00.01.00.07 |
| 2 | OMAPS00292783 | Open | SBL- PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state. | 00.01.00.07 |
| 3 | OMAPS00292785 | Open | SBL - IVA (ICONT1 & ICONT2) & MPU\_CPU\_1 core bring-up is not supported. | 00.01.00.07 |
| 4 | OMAPS00292802 | Open | Cortex A15 interrupt library is not supporting non-secure interrupt | 00.01.00.07 |
| 5 | OMAPS00293757 | Open | McSPI : Not validated on virtio tda2xx  DSP interrupt controller: Multiple Interrupt not validated on Virtio tda2xx  I2C EDMA: DMA mode not validated on virtio tda2xx | 00.01.00.05 |
| 6 | OMAPS00293758 | Open | Under include folder there is a folder called cred, where the previous version of IP related information are present, TI is in the process of replacing the whole CRED files with a TRM aligned HW files. | 00.01.00.02 |
| 7 | OMAPS00293761 | Open | On TDA1Mxx GPIOModuleReset function is getting hung. Function waits for reset done bit to set. In the test app the module reset is commented | 00.01.00.02 |

1. **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.2 | Compiler Cortex A8 |
| TMS470 CG | 5.0.2 | Compiler Cortex M3 |
| C6000 CG Tool | 7.4.1 | Compiler C674x |
| CCS | 5.2 | Code composer studio to load and run the application |
| Linaro bare-metal GCC | 4.7.3 | Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |

**StarterWare 00.01.00.07**

1. **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_01\_00\_07\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

1. **New In this Release**

* Scalar support is added in video display library [vpslib]
* Bugfixes:
  + Defect:OMAPS00293235 : I2C0 Probe Fails

1. **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI, SBL |
| Libs | I2C and VIP |
| Utils | Sensor config, Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| bootloader | SBL bootloader for TDA2xx platform. Validated SD bootmode on Zebu(V1.2.5) |

1. **Known Issues**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **State** | **Headline** | **Release**  **Version** |
| 1 | OMAPS00292781 | Open | SBL - Functional clock are not switching to non-gated state for coreaon, dss, gmac, rtc & prcm\_cd\_vpe PRCM clock-domain. | 00.01.00.07 |
| 2 | OMAPS00292783 | Open | SBL- PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state. | 00.01.00.07 |
| 3 | OMAPS00292784 | Open | SBL - Video1, Video2 & HDMI PLL programming is not implemented. | 00.01.00.07 |
| 4 | OMAPS00292785 | Open | SBL - IVA (ICONT1 & ICONT2) & MPU\_CPU\_1 core bring-up is not supported. | 00.01.00.07 |
| 5 | OMAPS00292802 | Open | Cortex A15 interrupt library is not supporting non-secure interrupt | 00.01.00.07 |
| 6 | -- | Open | QSPI: Only read is validated on Virtio tda2xx  McSPI : Not validated on virtio tda2xx  ARM15: Interrupt controller: Multiple Interrupt not validated on Virtio tda2xx  DSP interrupt controller: Multiple Interrupt not validated on Virtio tda2xx  I2C EDMA: DMA mode not validated on virtio tda2xx  EDMA : Validated only on M4 using virtio tda2xx, not validated on A15. | 00.01.00.05 |
| 7 | -- | Open | Under include folder there is a folder called cred, where the previous version of IP related information are present, TI is in the process of replacing the whole CRED files with a TRM aligned HW files. | 00.01.00.02 |
| 8 | -- | Open | On TDA1Mxx GPIOModuleReset function is getting hung. Function waits for reset done bit to set. In the test app the module reset is commented | 00.01.00.02 |

1. **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.2 | Compiler Cortex A8 |
| TMS470 CG | 5.0.2 | Compiler Cortex M3 |
| C6000 CG Tool | 7.4.1 | Compiler C674x |
| CCS | 5.2 | Code composer studio to load and run the application |
| Linaro bare-metal GCC | 4.7.3 | Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |

**StarterWare 00.01.00.06**

1. **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_01\_00\_06\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

1. **New In this Release**

* Secondary Bootloader(SBL) for TDA2xx platform, validated on Zebu(V1.2.5)
* SBL support only TDA2xx platform in this release.
* SBL SD bootmode validated on Zebu. QSPI & NOR bootmode implemented & not validated.
* Bugfixes:
  + Fixed OCMC virtual buffer end address and OCMC circular buffer size issue.
  + Updated Cortex-A15 interrupt controller to handle multiple interrupts.

1. **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI, SBL |
| Libs | I2C and VIP |
| Utils | Sensor config, Uart console |
| Examples | Examples for the supported hal peripheral drivers. |
| bootloader | SBL bootloader for TDA2xx platform. Validated SD bootmode on Zebu(V1.2.5) |

1. **Known Issues**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SR.No** | **CQ Id** | **State** | **Headline** | **Release**  **Version** |
| 1 | OMAPS00292781 | Open | SBL - Functional clock are not switching to non-gated state for coreaon, dss, gmac, rtc & prcm\_cd\_vpe PRCM clock-domain. | 00.01.00.07 |
| 2 | OMAPS00292783 | Open | SBL- PRCM modules prcm\_timer12 & prcm\_wd\_timer1 are not switching to module enabled state. | 00.01.00.07 |
| 3 | OMAPS00292784 | Open | SBL - Video1, Video2 & HDMI PLL programming is not implemented. | 00.01.00.07 |
| 4 | OMAPS00292785 | Open | SBL - IVA (ICONT1 & ICONT2) & MPU\_CPU\_1 core bring-up is not supported. | 00.01.00.07 |
| 5 | OMAPS00292802 | Open | Cortex A15 interrupt library is not supporting non-secure interrupt | 00.01.00.07 |
| 6 | -- | Open | QSPI: Only read is validated on Virtio tda2xx  McSPI : Not validated on virtio tda2xx  ARM15: Interrupt controller: Multiple Interrupt not validated on Virtio tda2xx  DSP interrupt controller: Multiple Interrupt not validated on Virtio tda2xx  I2C EDMA: DMA mode not validated on virtio tda2xx  EDMA : Validated only on M4 using virtio tda2xx, not validated on A15. | 00.01.00.05 |
| 7 | -- | Open | Under include folder there is a folder called cred, where the previous version of IP related information are present, TI is in the process of replacing the whole CRED files with a TRM aligned HW files. | 00.01.00.02 |
| 8 | -- | Open | On TDA1Mxx GPIOModuleReset function is getting hung. Function waits for reset done bit to set. In the test app the module reset is commented | 00.01.00.02 |

1. **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.2 | Compiler Cortex A8 |
| TMS470 CG | 5.0.2 | Compiler Cortex M3 |
| C6000 CG Tool | 7.4.1 | Compiler C674x |
| CCS | 5.2 | Code composer studio to load and run the application |
| Linaro bare-metal GCC | 4.7.3 | Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |

**StarterWare 00.01.00.05**

1. **Installation**

To install TDA1Mxx & TDA2xx StarterWare on your PC run the StarterWare installer (TDA1Mxx\_TDA2xx\_StarterWare\_00\_01\_00\_05\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx & TDA2xx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_TDA2xx\_StarterWare").

1. **New In this Release**

* Following modules tested on TDA2xx Virtio simulator

EDMA, MMU, I2C, Spinlock, GPIO, Mailbox, Mailbox\_m4, UART,

1. **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, OCMC, QSPI |
| Libs | I2C and VIP |
| Utils | Sensor config, Uart console |
| Examples | Examples for the supported hal peripheral drivers. |

1. **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **Id** | **State** | **Headline** | **Release**  **Version** |
| 1. | Open | QSPI: Only read is validated on Virtio tda2xx  McSPI : Not validated on virtio tda2xx  ARM15: Interrupt controller: Multiple Interrupt not validated on Virtio tda2xx  DSP interrupt controller: Multiple Interrupt not validated on Virtio tda2xx  I2C EDMA: DMA mode not validated on virtio tda2xx  EDMA : Validated only on M4 using virtio tda2xx, not validated on A15. | 00.01.00.05 |
| 1 | Open | Under include folder there is a folder called cred, where the previous version of IP related information are present, TI is in the process of replacing the whole CRED files with a TRM aligned HW files. | 00.01.00.02 |
| 2 | Open | On TDA1Mxx GPIOModuleReset function is getting hung. Function waits for reset done bit to set. In the test app the module reset is commented | 00.01.00.02 |

1. **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.2 | Compiler Cortex A8 |
| TMS470 CG | 5.0.2 | Compiler Cortex M3 |
| C6000 CG Tool | 7.4.1 | Compiler C674x |
| CCS | 5.2 | Code composer studio to load and run the application |
| Linaro bare-metal GCC | 4.7.3 | Build system on windows uses tools from Cygwin like gmake, rm, mkdir etc |

**StarterWare 00.01.00.04**

1. **Installation**

To install TDA1Mxx StarterWare on your PC run the TDA1Mxx StarterWare installer (TDA1Mxx\_StarterWare\_00\_01\_00\_04\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_StarterWare").

1. **New In this Release**

* vipCapt example is modified to remove EVM dependency.
* Directory structures changes for vpslib :
  + Added source code VPE and DSS, StarterWare drivers are yet not supported for these modules.
  + Created new library for starterware\_common for trace and memory allocation functions.
* I2C: Bug fix in Interrupt clear APIs.
* Build flow updates:
  + User needs to set correct tools path in build/makerules/env.mk
  + Typo fixed in makefiles.[EXERNAL is made to EXTERNAL]
  + UTILS\_INSTALL\_DIR should point to ccs/utils/cygwin. [XDC is removed for build dependency and ccs cygwin is used]

1. **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, GPMC, McASP. McSPI, EDMA |
| Libs | I2C and VIP |
| Utils | Sensor config, Uart console |
| Examples | Examples for the supported hal peripheral drivers. |

1. **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **Id** | **State** | **Headline** | **Release**  **Version** |
| 1 | Open | Under include folder there is a folder called cred, where the previous version of IP related information are present, TI is in the process of replacing the whole CRED files with a TRM aligned HW files. | 00.01.00.02 |
| 2 | Open | On TDA1Mxx GPIOModuleReset function is getting hung. Function waits for reset done bit to set. In the test app the module reset is commented | 00.01.00.02 |

1. **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.2 | Compiler Cortex A8 |
| TMS470 CG | 5.0.2 | Compiler Cortex M3 |
| C6000 CG Tool | 7.3.8 | Compiler C674x |
| CCS | 5.2 | Code composer studio to load and run the application |

**StarterWare 00.01.00.03**

1. **Installation**

To install TDA1Mxx StarterWare on your PC run the TDA1Mxx StarterWare installer (TDA1Mxx\_StarterWare\_00\_01\_00\_03\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_StarterWare").

1. **New In this Release**

* McSPI , McASP , EDMA chain and link examples are added.
* NOR Flash writer : gel file dependency for GPMC configuration is removed.
* Build dependency on XDC is removed. Ccsv5/utils/cygwin build command will be used.
* Build tool chain upgraded to TMS4705.0.2

1. **Release Content**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, VIP, GPMC, McASP. McSPI, EDMA |
| Libs | I2C and VIP |
| Utils | Sensor config, Uart console |
| Examples | Examples for the supported hal peripheral drivers. |

1. **Known Issues**

|  |  |  |  |
| --- | --- | --- | --- |
| **Id** | **State** | **Headline** | **Release**  **Version** |
| 1 | Open | Under include folder there is a folder called cred, where the previous version of IP related information are present, TI is in the process of replacing the whole CRED files with a TRM aligned HW files. | 00.01.00.02 |
| 2 | Open | On TDA1Mxx GPIOModuleReset function is getting hung. Function waits for reset done bit to set. In the test app the module reset is commented | 00.01.00.02 |

1. **Build Dependencies**

|  |  |  |
| --- | --- | --- |
| **Tool chain** | **Version** | **Description** |
| TMS470 CG | 5.0.2 | Compiler Cortex A8 |
| TMS470 CG | 5.0.2 | Compiler Cortex M3 |
| C6000 CG Tool | 7.3.8 | Compiler C674x |
| CCS | 5.2 | Code composer studio to load and run the application |

**StarterWare 00.01.00.02**

1. **Overview**

This document is the Release Notes for **Release 00.01.00.02** of the StarterWare. StarterWare 00.01.00.02 provides no-OS platform support for TDA1Mxx. The StarterWare package contains Device Abstraction Layer libraries and peripheral/board level sample/demo examples that demonstrate the capabilities of the peripherals on TDA1Mxx.

TDA1Mxx device family is a derivative of TMS320DM8148 that supports Advanced Driver Assistance Systems (ADAS) applications. For more information about the TDA1Mxx device family, please contact your local TI sales representative.For more information about TMD320DM814x, please visit <http://www.ti.com/product/tms320dm8148>.

1. **Documentation**

List of documents provided in the package

* TDA1Mxx\_StarterWare\_Userguide.pdf
* TDA1Mxx\_StarterWare\_API\_Reference.chm

1. **Installation**

To install TDA1Mxx StarterWare on your PC run the TDA1Mxx StarterWare installer (TDA1Mxx\_StarterWare\_00\_01\_00\_00\_setup.exe). The installer allows you to choose the installation directory. The TDA1Mxx StarterWare includes several sub-components and all the components will be installed in the same location (e.g., "C:/ti/ TDA1Mxx\_StarterWare").

1. **Features**

|  |  |
| --- | --- |
| **Category** | **Peripherals** |
| HAL | UART, I2C, GPIO, Mailbox, Spinlock, EDMA, VIP, GPMC |
| Libs | I2C and VIP |
| Utils | Sensor config, Uart console |
| Examples | Examples for the supported hal peripheral drivers. |

1. **Known Issues**

|  |  |  |  |
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